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A Review of the Hardware, Iron and Metal Trades.

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the handle, Fig. 1, the dies can be brought nearer together or separated, within the variations of a given size of fitting. The dies have a double taper, that is, the taper at the entrance for the first few threads is greater in degree than the standard taper, which forms a lead to the dies, causing them to start on the pipe without filing, even when there is a swell or burr, and requiring no receive whatever to start the dies on the there is a swell or burr, and requiring no pressure whatever to start the dies on the pipe. In Fig. 2 one of the dies is shown separately. It will be seen that the threads can be reached readily, and that the dies, when dull, may be sharpened by grinding. This obviates the necessity of sending them to the manufacturer—a saving both in time and expense. These dies are interchangeable in the stock, and do not need admining to cut the standard size of thread for justing to cut the standard size of thread for which they are made. They are made ad-justable for variations from the standard justable for variations from the standard size. Both stock and dies are marked to show when the dies are set for cutting standard sizes. Altogether, the new tool seems to be a very useful one. Mr. F. Arm-strong, Bridgeport, Conu., and 347 Broad-way, N. Y., Room 15, is the manufacturer.

Asbach's Loom for Weaving Wire Fabrics.

The demand for fabrics woven from wire has not only increased very much in recent years, but has called for an enlarged range of products of this class. In the sizes of mesh and the thickness of wire, the demand has tested the capacity of manufacturers, both in the direction of large mesh and stout wire and of finest, closely woven fabrics. Figured weaving has also become a necessity to meet the requirements of con-sumers. All this has, of course, been achieved only with the aid of looms adapted to the peculiar requirements of the special case. The resistance of the material to case. The resistance of the material to bending is so great, compared to the pliable thread generally woven on looms, that much of the delicate machinery used in weaving textile fabrics would not stand the wear and tear of weaving wire. The great desideratum is simplicity and strongth of the parts. In the accompanying illustration, which shows an improved loom constructed by Mr. Joseph Asbach, of Chemnitz, Germany, it will be noticed that such a loom, in its genwill be noticed that such a foom, in its general features, resembles the ordinary ones used for weaving cloth. The warp, it will be seen, passes over the beam, and is shed by the heddle leaves, so that it is parted as shown in the illustration. Then the shuttle is passed through in a manner which consti-tutes the chief feature of novelty and value in the machine. The shuttle is driven by means of a carriage actuated upon its entire course by positive mechanism. Within the beam in which the shuttle moves—and which, as the latter is a little longer than the width of the fabric, is in length more than three times that width—there is a channel, on the bottom of which a carriage is made to pass alternately to right and left, by means of the cords running over the pulley shown at the ends of the batten beam. For a distance about equal to the width of the fabric the middle part of this channel is depressed so that one pair of the whole of the fabric the middle part of this channel is depressed, so that one pair of the wheels of the carriage, when they reach the incline leading to this depression, rise, while the other pair descend. The carriage is provided at its ends with lugs, which project into holes of the shuttle, which has a race, or way, of its own in the upper part of the batten beam. In consequence of this arrangement the shuttle, during its entire course, is driven by the carriage. this arrangement the snuttle, during its en-tire course, is driven by the carriage, through the agency of one or the other of the lugs, and consequently there is always a direct and even pull on the wire constituting the woof. This secures for the loom the advantages of a small consumption of power, a certainty of action, and little wear and tear. Samples of the fabrics woven by the Asbach loom, which have been shown us by the inventors' American agent, Mr. A. G. yers, of 94 Beekman street, New York, exhibit great uniformity, though the sizes vary from 8 meshes to the inch to 60 to the inch. Some of the figured designs are simple and neatly woven, which would recommend them for many uses, especially for articles of democratic well-transfer. articles of domestic utility.

Armstrong's Improved Stock and Dies for Pipes and Bolts

The tool which we illustrate is intended to meet the requirements of those who have been annoyed with the numerous inconvergences arising from the use of the common stocks and dies. In its construction the inventor has aimed to retain all the advantages of the old methods, while at the same time gaining many others in addition. The tool belongs to the class using divided dies, and by means of guides and a screw in the handle, Fig. 1, the dies can be brought mearer together or separated, within the vagarage of the cost o

addition to the lantern, the seven uppermost being 14 feet in diameter. The estimated cost is £78,000.

Mild Steel for Guns.

Mild Steel for Guns.

Mr. Henry Bessemer writes a long letter to the Times in answer to some remarks made by two high military authorities regarding steel for war purposes, at a discussion on Dr. Siemens' paper on this subject

COMPRESSED AIR FOR BREAKING DOWN COAL, instead of gunpowder and other explosives. Messrs. Garforth have recently constructed has been devised by Messrs. Le Grand and Sutcliffe, of London. The piles consist of cast or wrought-iron tubes, having a solid point, the upper part of which, inside the tube, is flat. The piles are driven in by means of a "monkey," raised and dropped within the tube, which therefore serves at wrought-iron pipes to a cast-iron "cartridge" 12 inches long, which is placed in a suitable hole drilled in the coal and stemmed

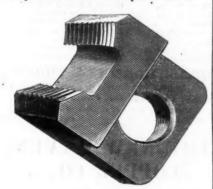


Fig. 2.-Full Sized View of a Die.

Fig. 1.—Stock and Dies, Showing Adjusting Screw.

ARMSTRONG'S IMPROVED STOCK AND DIES.

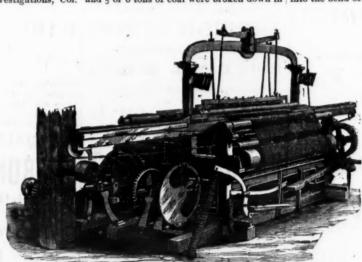
with me to my works at Sheffield, in order to make himself practically acquainted with every detail of the process, with a view to its immediate introduction into the gun factories at Woolwich. Not only could steel of the mildest quality be at that time produced, but steel was made so mild that it in some cases passed by im-perceptible gradations down to pure soft homogeneous iron. I have now in my possession a small canweld or joint, in this mild metal as far back as 1858, and I may mention that between that period and the opening of the Inter-national Exhibition of

1862 I had manufactured to order, at my
Sheffield works, no less
Sheffield works, no less
than 92 mild steel guns, and had at that period
to the 12, 18 and 24-pounder guns exhibited
on that occasion, together with large gun
hoops, part of a 120-pounder, and several projectiles, all of which were made of mild steel.
I may further mention that Colonel Wilmot
I may further mention that clean water and the steel standard of the pipe is provided by a simple conrelation of the method is still crude
to the mold, and sand is run between them.
The plunger, in passing through the spiral,
tellements of what may prove to be an important improvement in extracting coal from
fiftery mines.

A correspondent of the Berg. 4. Hütt.

Zeitung gives the following on that occasion, together with large gunhoops, part of a 120-pounder, and soveral projectiles, all of which were made of mild steel.
I may further mention that Colonel Wilmot
and his colleagues had, after mature deliberation, perfectly satisfied themselves that
mild steel was the most suitable known
material for guns; and I, at their request,
cave in a tonder for supplying the necessary gave in a tender for supplying the necessary apparatus for producing steel of any desired quality, ready to be poured into their molds, The New Eddystone Lighthouse.—The tower of the famous Eddystone Lighthouse is now in a fair state of efficiency, but the gneiss rook on which it stands has been seriously shaken by the incessant sea strokes on the tower, and the rock is considerably undermined at its base. It has, therefore, been determined to erect a new tower on a spot which affords a good foundation near low water level, at about 127 feet distant from the present site. The focal plane of the present lighthouse is at an elevation of 72 feet above high water; that of the new building will be 130 feet. The actual useful range of the light, which is now about 14 nautical miles, will thus be extended to 17½

at the United Service Institution. "According to the report in the Times," says Mr. Bessemer, "General Younghusband, C. B., stated that 'when the use of iron in the coiled guns was decided upon the mild steel was not known.' This is an entire mistake on his part, and is totally at variance with the facts of the case; for I am able to show that the coal is broken down by the expansive colliery, by permission of Messrs. Morland, of Hollinwool, the machine used being capable of giving a pressure of 20,000 pounds to



ASBACH'S LOOM FOR WEAVING WIRE FABRICS

of Hollinwool, the machine used being cypalacts or the case; for I am able to show that
nearly two years prior to the advent of Sir
W. Armstrong and his coiled-iron system at
Woolwich, Col. Eardly Wilmot, the very
able superintendent of the Royal Gun Factories, had, in conjunction with myself, investigated the question of employing mild
cast steel, both for ordnance and projectiles,
for a period of nearly two years; and step
by step, as my new process of steel-making
was developed at my own works, mechanical and chemical tests of its properties were
simultaneously made at the Royal Arsenal.

After these prolonged investigations, Col.
Wilmot went down
with me to my works

ANALYSES OF EXPLOSIVES

used as substitutes for powder: Diorexine
—nitrate of potash, 50 per cent.; nitrate of
soda, 25 per cent.; sulphur, 12 per cent.;
sawdust from hard wood, 13 per cent.;
sawdust from hard wood, 13 per cent.;
carbon, 15.23 per cent.; sulphur, 11.43 per
cent.; petroleum, 4.29 per cent. Petralite
—nitrate of potash, 64 per cent.; impregnated wood or charcoal, 30 per cent.; antimonium crudum, 6 per cent.; sulphur, 10 per cent.;
lignite, 10 per cent.; sulphur, 10 per cent.;
lignite, 10 per cent.; picrate of soda, 3 per
cent.; chlorate of potash, 2 per cent. Carboasotine—nitrate of potash, 61.04 per cent.;
sulphate of iron, 0.73 per cent.; soot, 24.65
per cent.; sulphur, 13.53 per cent.
Two German engineers, Fischer and
Stiehl, have proposed a
NOVEL SYSTEM OF VENTILATION, ANALYSES OF EXPLOSIVES

NOVEL SYSTEM OF VENTILATION, which is based upon the fact that the tem

The Kaiserslautern Foundry Company, of Germany, has recently patented an apparatus which is to serve for indicating automatically when given maximum or minimum temperatures are reached. This instrument,

THE THERMOTELEGRAPH.

consists of a U-shaped tube, the ends of which open into closed larger vessels. The larger of these two vessels is entirely filled with alcohol, which in expanding presses a column of quicksilver in the tube upward. On the other side of the quicksilver there is also alcohol, the quantity not being so great, however, as to fill the second vessel. Into both of these vessels platinum wires have been melted, the length of which is so ad-justed that the end is touched by the quicksilver as soon as the temperature to be sig-nalled is reached. A third wire is melted into the bend of the tube and is connected

with a battery; it is always covered by quicksilver, so that as soon as the quicksilver touches one of the two alarm wires in the vessels, the circuit is closed and an

alarm is sounded.

Mr. C. Primard describes, in the Moniteur Industriel, an apparatus for making MOLDS FOR IRON PIPE. to be cast vertically. It is simple and cheap, consisting of a metal-lic casing rolled in a spiral, and therefore capable of beng con-tracted or expanded at will. A plunger, attached to the lower end of a spindle, and having a diameter equal to the outer diameter of the pipe, passes through the interior of the casing, which is placed in the center of the mold.

A German engineer, Mr. E. Froitzheim, of Cologne, has designed a

NEW STAMP MILL

with the object of avoiding the disadvan tages of the ordinary construction, notably the wear on the guides by reason of the lateral lift of the the tappets, and of admitlateral lift of the the tappets, and of admit-ting a greater rapidity of the blows. The chief feature of the mill is that the blows are not effected by the dropping weight of the stamp, but by a large and powerful elliptical spring, which is lifted and depressed by the crank on the shaft, its ends being fastenend to the stamp through the medium of links to the stamp through the medium of links.

The Engineer gives an illustrated descrip-

bearings, carrying a driven pulley. Over the latter runs an endless emery band, which is also supported by five loose pulleys, the upper one of which is placed in a mov-able bearing, acted upon by a spring in order to keep the belt tight. The band is usually made of leather, covered with emery of a number suitable for the work to be done.

An Explosion of Dynamite.

An explosion of dynamite occurred re-An explosion of dynamite occurred re-cently in the vicinity of the German town of Hagen, which well illustrates how closely all the precautions necessary in handling dynamite should be followed. According to dynamite should be followed. According to the contractors of the work under whose management the explosion occurred, the circumstances were as follows: In consecircumstances were as follows: In consequence of severe weather the dynamite used in blasting had to be thawed. In an old quarry a boiler of longitudinal form was set up, and the dynamite cartridges were placed in a wire netting suspended in the boiler a suitable distance above high water level, and then a cover was screwed on the preming in the boiler. opening in the boiler. The steam generated softened the dynamite sufficiently to make it available for use. A portion of the supply of dynamite had become wet in the magazine, and in consequence of this some of the nitroclyceries in the mistage. of the nitroglycerine in the mixture was extracted and deposited on the outside of the cartridges. The workman in charge extracted and deposited on the outside of the cartridges. The workman in charge had not attached any importance to this cir-cumstance, and had placed the cartridges on the wire netting in the boiler in the on the wire netting in the boiler in the usual way. In consequence of the heat the nitroglycerine gathered in drops, fell into the water, and probably came into contact with the hot sides of the boiler, causing an explosion. There were no cartridges in the boiler at the time of the explosion.

To this view of the case a local correspondent takes exception. He thinks that it is to be wondered at that an explosion did not take place sconer. If frozen dynamite is suspended in a sieve above boiling water, the infusorial earth constituting the body of the dynamite will eagerly absorb steam and

the dynamite will eagerly absorb steam and the dynamice will eagerly absorb steam and water and expel a corresponding amount of nitroglycerine, which will gradually gather in drops and sink to the bottom in water. Nitroglycerine does not float on the surface of water, because its specific gravity is 1.6. By the method of thawing used a larger quantity of nitroglycerine must have accuquantity of nitroglycerine must have accu-mulated on the bottom of the boiler, and therefore the explanation founded upon the moistening of the cartridges in the magazine is without value. The entire system is dangerous. The explosion can only have taken place because the whole bottom of the boiler was covered with nitroglycerine and was heated beyond the temperature of igni-tion by the direct flame of the fire, or because all the water in the boiler had been evapo-rated and the nitroglycerine came into contact with the highly-heated surface of the boiler. The accident, which fortunately cost no lives, is a striking illustration of the neglect of responsible parties to follow closely the rules provided for the handling of dynamite, which should always be thawed in vessels immersed in lukewarm water.

The Machinery of the Coal Trade .-The facilities of the Reading Railroad Co. for handling and marketing coal are thus described in an article in the Philadelphia Ledger: At Port Richmond, to accommodate the portion of the coal product centering there it has a frontage of 5600 feet, with 23 piers and a total length of docks of 18,000 feet. The length of its longest pier is 1320 feet, and a total length of its size to the feet. The length of its longest pier is 1320 feet, and a total length of its pier trestle-work is 20,212 feet, connecting with 10½ miles of single track connections to piers. The storage capacity of the piers is 200,000 tons, and their estimated annual shipping capacity is 4,000,000. The heaviest annual shipments, which were in 1877, were 2,720,000 tons; the heaviest weekly shipments, 95,858 tons, and the heaviest daily shipments, 28,000 tons. The coal sent to Port Richmond for shipment from 1843 to November 20, 258 reached for 258 ber 30, 1878, reached 55,559,818 tons. The number of coal-laden vessels cleared from number of coal-laden vessels cleared from Port Richmond in 1875 was 6052; in 1876, 5893; in 1877, 10,476; in 1878, 8150. In addition to the company's coal piers, it has built a large wharf, used exclusively for grain and general merchandise traffic, and on which a large elevator of 500,000 bushels capacity is about being erected. The business done over this wharf amounted to 60,-618 tons in 1874, 67,971 tons in 1875, 61,959 tons in 1876, 78,780 tons in 1877 and 307,741 tons in 1878, and with the large tonnage over the company's wharves at Willow street, 477,305 tons during the above years, street, 477,305 tons during the above years, makes an aggregate of 1,054,374 tons, chiefly grain for foreign countries. Some 2475 vesty sels, principally large ships and steamers, a loaded and discharged at these wharves in the above years. The company have erected on their property, north of the coal piers, an extensive and very substantial ship-yard, containing tool, boiler, bending, hanging, is mith and joiner shops, provided with the prost approved machinery, molding loft and most approved machinery, molding loft and four ship-ways, and launching dock of 250 feet in width.

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New Patents.

We take the following abstract of new patents, recently issued, from the official

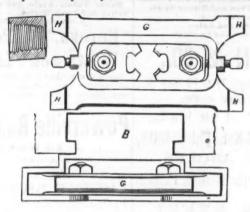
SCREW-CUTTING DIES AND HOLDERS. To John H. Vinton, Bridgeport, Conn., assignor to Frank Armstrong, same place.—
Oct. 8, 1878.—I. The dies formed with the cutting thread having a uniform depth and pitch from end to end, and with a double

located below and respectively on opposite sides of fuller.

4. The combination, with two supports for

4. The combination, with two supports for the test bar, of an upright rotating screw shaft, having a fuller suitably secured to its lower extremity, which is located above and centrally between said supports, together with a guide arm formed with an opening, through which the fuller works in vertical movement.

5. The combination, with a rotating vertical shaft having screw-threaded engageand having its ends extended at the four corners beyond the plane occupied by the



head of the adjusting screws, to form lug H, which shall serve to maintain the plate against movement when in a die-box, and at the same time guard the adjusting screws are time guard the adjusting screws are interested by the continuous continuous desired and the same time guard the adjusting screws are continuous as a series of the test bar, located below and respectively on opposite sides of fuller.

6. The combination, with a fuller or continuous desired are continuous desired as a series of the test bar, located below and respectively on opposite sides of fuller. against accidental movement.

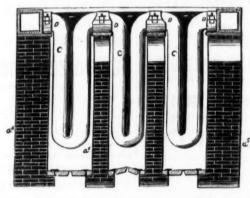
against accidental movement.

3. The die-box B, adapted to enter the die-recess in the head of a pipe-cutting machine, and extended forward and laterally to form a receptacle for a die and die-

HOT-BLAST OVENS.

equivalent device which is vertically adjusted, of supports located respectively below and on opposite sides thereof, together with a scale beam which connects with one of said supports, and is adapted to indicate the degree of pressure transversely imposed upon the test bar.

To Wm. A. Miles, Copake Iron Works, New York, and John H. Burghardt, Curtis-ville, Mass.—Oct. 15, 1878.—The packing adapted to provide bearing for the opposite



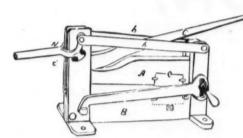
sleeves connect the pipe sections, which are extremities of a test-bar as the latter is supported by the partition walls. The transversely suspended thereby, supports being movable, so as to accommodate themoselves to the elongation of said test-bar

METAL SHEARS.

To William G. Collins, Cleveland, Ohio, assignor to the Cleveland Hardware Comassignor to the Clereland Hardware Company, same place.—Oct. 15, 1878.—I. The combination, with the lever C, with pivot o' and straps P P, or equivalent mechanism, and two shearing blades of the standards E F.

selves to the elongation of said test-bar under pressure.

8. The combination, with a scale-beam whose short arm indirectly connects with one of the test-bar supports, and whose long arm is provided with a spring-balance, of a counterbalancing-weight suspended by a connection passing over a pulley or equiva-lent device located in horizontal plane above



3. The combination of the blades A B, standards E F G H, guard L., lever C, straps P P, catch N, and braces n h. METAL TESTING MACHINE.

To John R. Grout, Detroit, Mich.—Nov.

26. 1878.—I. The combination, with an upright rotating screw shaft adapted to have vertical movement, of a fuller suitably secured to the lower extremity of the same.

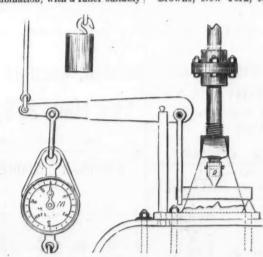
2. The combination, with a fuller suitably

long arm of scate-beam cell previded with a spring-balance exerting pressure downward, and a counterbalancing weight exerting force in the opposite direction. 208,711.—Steam Generators.—William F. Browne, New York, N. Y., assignor to

2. The combination, with two shearing blades, straps P P, lever C, with pivot c' and standards E F, provided with stepped slots of the catch N.

3. The combination of the blades A B, standards E F G H, guard L., lever C, which may be set the form the test-bar, located below and on opposite the catch N.

3. The combination of the blades A B, standards E F G H, guard L., lever C, which may be said supports is connected and which one of said supports is connected, and a scale-beam connecting with the link, the long arm of scale-beam being provided with



ecured to the lower extremity of a vertical shaft, adapted to be uniformly moved downward, of two supports for the test bar, located below and respectively on opposite sides of fuller.

3. The combination, with a fuller suitably secured to an upright rotating shaft, adapted to have a uniform vertical movement, of two knife-edged supports for the test bar,

Hydrocarbon Steam Generating Company.
—Oct. 8, 1878.
208,734.—Annealing Furnaces.—Edwin H.
Hill, Worcester, Mass.—Oct. 8, 1878.
208,735.—Utilizing Tin Scrap and Manufacture of Stannates.—John Holliday and John Lambert, Brooklyn, assignors to William Slack, Stapleton, N. Y.—Oct. 8,

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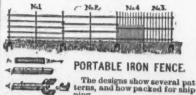
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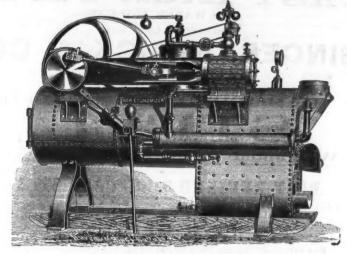
Sole agents Glasgow Iron Co. and Pine Iron Work manufacturers of Muck Bar and all grades of Plat Iron. Colebrated "Hild bear" and "Pine" Pines of "Pine" and "Pine" a

The "New Economizer" Engine and Boiler.

We give three illustrations upon this page of an engine and boiler called the "New Economizer," manufactured by the Porter Manufacturing Company, Limited, Syracuse, N. Y. In several respects this combined machine departs from the ordinary types, an effort having been made to obtain a more economical steam producer than those generally used.

Fig. 1 shows the engine and boiler Fig. 1 shows the engine and boiler mounted ready for service. The engine is carried by brackets upon the boiler shell, but has an independent frame, in which the metal is disposed very nearly upon the line of the strains. Both pump and feed-water heater are located upon the side of the boiler a little below the engine, in an easily accessible position. The boiler is mounted upon skids by means of a large bracket under the smoke-box end and two small brackets on each side of the fire-box. The boiler itself is of peculiar construction. accessible position. The boiler is mounted upon skids by means of a large bracket upon wednesday, March 26. The Harald has der the smoke-box end and two small brackets on each side of the fire-box. The boiler itself is of peculiar construction.

plied with steamers sufficient to send two plied with steamers sufficient to send two fortnightly from this port. Already they have secured four iron steamers—viz., the Volmer, Freja, Hermod and Harald. These vessels will sail under the Danish flag. The Volmer is 1531 tons, 150-horse-power, built at Copenhagen in 1876, and will be commanded by Captain Hansen; the Freja is 1364 tons, 150-horse-power, built on the Clyde in 1875, and will be commanded by Captain Johannsen; the Hermod is 1458 tons, 120-horse-power, built on the Clyde in 1876, and will be commanded by Captain Olsen; the Harald is 1531 tons, 150-horse-power, the the the Clyde in 1876, and will be commanded by Captain Olsen; the Harald is 1531 tons, 150-horse-power, the Haral Olsen; the Harald is 1531 tons, 150-horse-power, built at Copenhagen in 1876, and will be commanded by Captain Bonde. Mr. Edye says the new line is simply on trial, and if profitable it will be permanent. The steamship Volmer will arrive here from Antwern in the course of a day or so and Antwerp in the course of a day or so, and



Side View of Engine and Boiler.

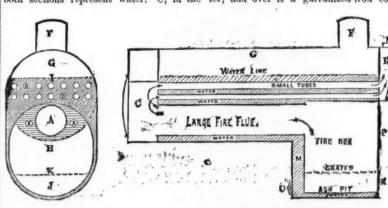
Fig. 1 .- THE "NEW ECONOMIZER" ENGINE, BY THE PORTER MFG. CO.

inal and cross sections of the boiler are given, will show the construction very clearly. The design of the boiler may be termed "flue return tubular"—that is to say, the fire passes from the fire-box through a large

Externally it has the shape of an ordinary locomotive boiler with a continuous water leg beneath the ash-pit, a form familiar to those of our readers who are at all acquainted with the more common forms of American portable engines. Here, however, the resemblance to the ordinary locomotive boiler ceases.

A New System of Heating and Ventilating Railroad Cars.—The Pennsylvania Railroad is experimenting with a new system of heating and ventilating railroad cars, invented and perfected by its mechanical engineers at Altoona. The system used to accomplish the desired end is by means of heating and Ventilating Railroad Cars.—The Pennsylvania Railroad is experimenting with a new system of Heating and Ventilating Railroad Cars.—The Pennsylvania Railroad is experimenting with a new system of heating and ventilating Railroad Cars.—The Pennsylvania Railroad is experimenting with a new system of heating and ventilating Railroad Cars.—The Pennsylvania Railroad is experimenting with a new system of heating and ventilating railroad cars, invented and perfected by its mechanical engineers at Altoona. The system used to accomplish the desired end is by means of heating and ventilating Railroad Cars.—The Pennsylvania Railroad Cars.

A New Syst ble engine, in which hard coal is used, thus avoiding both dust and smoke. Two pipes are on one side of the boiler, above the lowest gauge-cock, running through the car floor. To one of these pipes is attached a fire passes from the fire-box through a large flue to the smoke-box. It then returns to the uptake at the front end by means of a series of ordinary boiler tubes. In the cross section shown in Fig. 2, B is the fire-box; A, the large tube; $x \times x$, two small tubes on cach side: these carry the smoke and flame from the smoke box; D D are the tubes by which it is returned to the front end; I is the water line; G, the steam space, and F, the steam dome. The shaded portions in both sections represent water. C, in the



Cross Section

Longitudinal Section.

Fig. 2.—SECTIONS OF THE "NEW ECONOMIZER" BOILER.

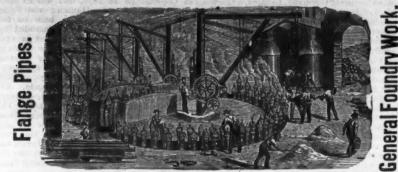
longitudinal section, shows the location of the smoke-box; E is the uptake, and N, the smoke-stack; J is the ash-pit; P R are the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box, while S is the doors to the ash-pit and fire-box while the fire-box while struction it will be seen that there is no dan-ger from the accumulation of mud at the bottom of the water legs in position when it cannot be reached, the water leg in this cess being continuous beneath the fire-box and ash-pit. Although the value of this surface for heating purposes is not worth mentioning, its advantage in replacing easily cleaned surfaces for those which are not readily accessible, is considered great. In many respects this boiler resembles a very successful stationary boiler bles a very successful stationary boiler largely used in New England, and known as the Hinkley boiler. The characteristic dif-ference is in the fact that the Hinkley is a return tubular boiler. The advantage of the large flue over small tubes in the same position, is best seen when wood or soft coal is used for a fuel. If with such fuel the flame is at once forced into small tubes, it is extinguished and much combustible gas sent out of the stack unconsumed. By using a large flue the gases have ample time to burn before they enter the small tubes. The Judson governor is used to control the speed. The manufacturers claim that the boiler is ne of the most economical in the market.

the door of the uptake; O is a hand hole for pipes, diffuses the hot air, casting it to the clearing out the water legs. By this construction it will be seen that there is no dankeeps a constant stream of pure air passing pipes, diffuses the hot air, casting it to the top, where it goes out the ventilator, and keeps a constant stream of pure air passing through the car. In case of separation or breakage, the supply can be checked and another connection effected. The apparatus banishes dust, and in addition to thoroughly heating and ventilating the cars, gives room for eight more passengers in each car.

Improved Life-Saying Apparatus.— Lieut. D. A. Lyle, of the Ordnance Depart-ment, has, since his connection with the life-saving service, done much to improve the apparatus for saving shipwrecked crews, chiefly by extending the range of the mortars used. He has devised a gun and shot, the entire weight of which is 202 pounds (mortar and bed weighing 185, and the shot 17 pounds), which has attained a the shot 17 pounds), which has attained a maximum range of 695 yards. Over the best guns this is a gain in range of 64 yards, with a reduced weight of ordnance of 366 pounds, and of 222 yards, with a reduced weight of ordnance of 103, and over the mortar in general use, 274 yards, with a reduced weight of ordnance of 110 pounds. A smaller gun has also been devised by the A New Steam Service to Havre.—A new steamship line between this port and Havre has been established. It is called the Merchants' Express Line to Havre, and will be under the management of Funch, Edye & Co., shipbrokers, of No. 27 South William street. Mr. Edye says the new line will carry freight axclusively. His firm have made arrangements with owners of vessels in Denmark, by which they are to be sup-

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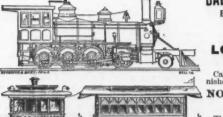
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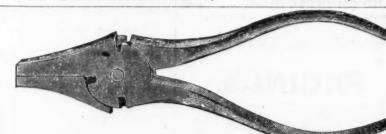
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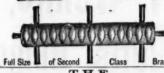
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Of the various meterials used as roof overings, some few give good results in all respects, and are therefore satisfactory, while some are so nearly worthless as to cause perpetual annoyance wherever em-ployed. A good roof, next to a good foundation, may be declared the most important consideration in building. What shall the building be roofed with? is a question that occurs in the construction of buildings of every kind, from the poorest to the best, and the number of imperfect roofs, in the knowledge of every one, produces the impression that a good roof is quite rare. Good roofs need no attention, and are therefore seldom mentioned; while poor roofs, requiring constant repairs, are a fruitful source of complaint, and their existence is continually advertised.

It is not our purpose at this time to enter It is not our purpose at this time to enter into an exhaustive argument concerning roofing materials. We prefer to present the subject in a general way, as introductory to more practical discussions upon specific items in succeeding issues. We shall content ourselves at present with mentioning some of the principal characteristics of the more prominent roof-coverings in common use, calling attention only in the most conmore prominent roof-coverings in common use, calling attention only, in the most general way, to the relative advantages and disadvantages of their employment. There are two leading considerations which are taken into account in deciding upon a roofing material. The first is its cost, and the second is its durability. In deciding upon the first, the cost of the mere covering is but a part of the consideration; the relative strength required in the roof framing, as between competing materials, is frequently a larger competing materials, is frequently a larger item than the cost of the covering, and accordingly the expense in this particular alone often decides the question.

The roof coverings upon modern buildings may be comprised in a very few general classes. There are wooden roofs, composition roofs, metal roofs, and slate and tile roofs in general use. Of the first class, em-bracing shingle roofs and all other forms of wooden roofs, there is very little to be said of special interest. While wooden roofs appear to be quite appropriate for wooden buildings, the fact that the better class of wooden buildings in very many cases employ either slate or metal coverings, goes to prove that the wooden roof lacks the elements which would render it entirely desirable. Good shingles well laid, and especially if protected by a coating of good mineral paint, form a roof covering which is comparatively durable, but as some forms of metal roofs and slate roofs far excel it in this important particular, the shingle roof is employed only

on buildings of the cheapest character.

In the second class, which we have designated as composition roofs, we include two general kinds—the one being those roof coverings the essential features of which are a fabric or paper saturated with tar and covered with sand or gravel, and the other consisting of a fabric or paper treated with a material which is supposed to resist the action of sun, rain and frost. We believe it may be said with truth that the roofs of this class, except in very rare cases, have no intrinsic merits to warrant their use. They have held their place before the build-ing public from time out of mind, only upon the basis of their cheap first cost and their great availability. Roofs of this class, not to condemn them with unreasonable severity, nor yet to admit altogether what enthusiastic manufacturers claim for them, have unmanufacturers claim for them, have undoubtedly served a very good purpose for use upon buildings of a temporary character. But what can we say favorably of their employment upon buildings of the better class, apon handsome residences, and upon expensive store buildings? The policy which expends proportionately more money in the decoration and embellishment of a structure than upon its procession from the elements. decoration and embellishment of a structure than upon its protection from the elements, is ever to be condemned. A list of the ma-terials which form the ingredients of com-position roofs, is a matter of more than pass-ing curiosity. In the search for a good roof that shall be inexpensive, men have made use of many strange combinations and mixtures. Gutta-percha, pulverized clay, rice, red-lead, gypsum, salt, pulverized brick, resin, shellac, linseed oil, asphaltum, whitelead, pulverized slate, Japan varnish and mineral paint, with many others, go to make up the assortment of materials from which different compositions have been formed. Many of the mixtures devised have been natents. Some have been quite extensively introduced, but none

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to pitch, valleys, &c., render a roof covered to pitch, valleys, &c., render a roof covered with tin about as satisfactory as any material used. Like every other, it may be grossly abused, and in the mind of each reader of this article, no doubt instances of faulty tin roofs at once occur; but it is to be borne in mind that good roofs give so little cause for remark, that they exist on all sides of us without our attention being called to them

Another class of metal roofs in common use, particularly for the past few years, are the iron roofs. A considerable portion of these roofs consist of sheets of common black iron, say 30 x 96 inches in size, of ordinary thickness, protected from the weather action only by a coating of paint. The essential difference between the various claimants to one of the warious claimants to popular favor lies in the character of the seams and joints used between the sheets. A few of them employ a single crimp or corrugation down the center of each sheet, but most of them are entirely plain. Their introduction was commenced at a time when tin was very much higher in price than at present, and it was with that material that iron roofs were placed in competition. The iron roofs were placed in competition. The great saving in the labor of laying, as well great saving in the labor of laying, as well as the cheaper cost of the material, gave a great impetus to the trade, and the fact was soon recognized that a good iron roof was quite as durable as a poor tin one, and somewhat cheaper. Black iron protected by paint cannot, by the nature of things, form a roof of permanent durability, and we fail to see any good reason for the employment of this kind of iron roofs, save the fact of economy of first cost. conomy of first cost.

Galvanized iron has never been extensively used as a roofing material, because of its high price in comparison with others. The various styles of iron roofs just referred to above are all adapted to the use of galvanized iron, and roofs are made to order of this material, as occasion requires, with fair results. Corrugated sheets, both or black iron painted and of galvanized iron, have been largely employed in the roofing of warehouses, railway depots, mills, &c. Roofs of this character, however, are not adapted to general use, and accordingly, cor-rugated iron is not a material to be consid-ered for dwellings and other buildings of moderate cost, for ordinary purposes. Metal shingles or metal tile have been before the shingles or metal the have been before the public in one shape and another for a long time without coming into general use. Their cost is above that of a roof composed of large sheets of the same quality and grade of material, while greater pitch is required for their successful use.

The last class to which we shall refer at this time, is that comprising roofs covered with slate and earthen tile. Of the latter, the introduction into general use in this the introduction into general use in this country has been so recent, that data has not been obtained as yet to enable us to form a satisfactory opinion. We know of some very acceptable roofs of this character, and we know of some quite the reverse. We have in mind one which, while not being satisfactory in the usual essentials of a roof, cost probably three times as much as slate would have cost in the same place. Slate roofs, while requiring greater pitch and slightly heavier framing than some other materials, are commonly regarded as the best and most satisfactory roofs that can the best and most satisfactory roofs that can be laid in this country. Slate roofs, as well as others, may be spoiled in the laying, but the material itself being practically indestructi-ble, the principal consideration in its use is the workmanship employed.

Finally, it may be said that, under cer-tain circumstances and from certain stand-points, strong objections can be made to the points, strong objections can be made to the employment of every roofing material that is in use; and, on the other hand, that under favorable conditions a good roof can be made from almost any material ever employed for the purpose. With these facts in mind, and remembering also the strong prejudices common to mankind for and against whatever they may have to do with, we hope to be able to conduct in these colwe hope to be able to conduct in these col-umns a discussion of the merits and demerits of special roofs, considering the ques-tions of the qualities and dimensions of materials, degree of pitch, relative exposure, gutter connections, general durability, and the workmanship of making and laying, in a manner which shall be fair toward all and with injustice toward none.—Carpentry and

Shipbuilding at Chester.-Four steamships, wholly of iron, are now building on the Delaware at Chester, Pa. The largest of these is for Mallory's New York and Texas line. It will be 328 feet long, and of been quite extensively introduced, but none have secured an enduring popularity.

Of metal roofs, lead, zinc and copper, although extensively used in other countries, are practically out of the market here, on account of their greater cost in comparison with tin, slate, &c. Each of these materials possesses qualities for roofing purposes pecular to itself, and each has warm friends and lar to itself, and each has warm frie about 3000 tons burden. The vessel is 20 liar to itself, and each has warm friends and decided opponents among the building classes. Zinc has been considered a failure in this country, attributable to the climate, &c. We are disposed to consider this a mistake, and to lay the responsibility for poor and unsatisfactory zinc roofs altogether to the thickness of the metal used and the character of the workmanship. Zinc roofs, so far as the attempt has been made to use them in this country, have been laid in competition with tin and iron roofs; whereas the cost of a zinc roof, using an amount of metal, and the character of workmanship to make it perfect, would put it so far above these materials that competition between it and them would be out of the question endounced in the finished in hard woods, and them would be out of the question endounced to be the fastest ocean same line, conceded to be the fastest ocean steamer afloat, except that she will be roof feet long. She will be 310 feet long, with three iron decks beside the hurricane deck, seven water-tight compartments, and compound engines of 2000-horse-power. The other steamship is for Ward's New York and Havana line, and will be a sister ship to the Niagara of the same line. She is 294 feet long, with three iron decks beside the hurricane deck, seven water-tight compartments, and compound engines of 2000-horse-power. The other steamship is for Ward's New York and Havana line, and will be a sister ship to the Niagara of the same line. She is 294 feet long, with three iron decks beside the hurricane deck, seven water-tight compartments, and compound engines of 2000-horse-power. The other steamship is for Ward's New York and Havana line, and will be a sister ship to the Niagara of the same line. She is 294 feet long, with three iron decks beside the hurricane deck, seven water-tight compartments, and compound engines of 2000-horse-power. The other steamship is for Ward's New York and Havana line, and will be a sister ship to the Niagara of the same line. She is 200 hourself long, with three iron deck



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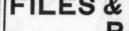
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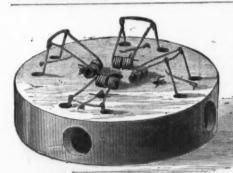
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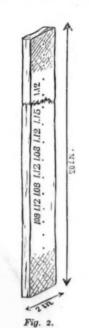
To the Editor of The Iron Age.—The Franklin Institute Journal of December and anuary last gives two able and well-written January last gives two able and well-written articles relating to the testing of boiler plate, &c. One is by Mr. Chas. Huston, of Coatesville, Pa., the other by the Hon. James A. Dumont, Supervising Inspector General of Steamboats. By the careful manner in which both have conducted their manner in which toom have experiments, they evidently are in earnest to find out facts, not being contented with mere theories. The interesting matter they have gathered relates, however, exclusively to tests made with specimens of a certain character; viz., that known as having a short section or fillet. We thought that the conclusion drawn from a few of our experi-ments with boiler plates, of both the short conclusion drawn from a few of our experiments with boiler plates, of both the short section and the long parallel section, may not be without interest to your readers, and possibly may have a tendency to lead to changes in the mode of preparing test specimens, from short to long ones, which we regard as important. To discover the hidden quality of material generally, it is admitted by, all that the longer the specimen the better. The great variety of specimens sent to us from all directions for testing, has enabled us to add our testimony to that of many others to support the statement that many others to support the statement that short specimens, as a rule, give a greater amount of strain per square 'inch than long ones. This fact being established, it is

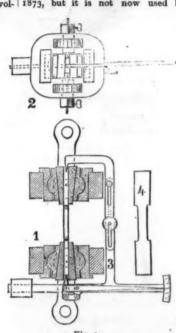


clear that boiler-plate specimens should be made as long as possible. The testing of boiler plate is of too great importance to be slighted, plate is of too great importance to be slighted, as an incorrect test might endanger life and limb. The investigation, therefore, should be thorough, searching and conducted with the greatest care, accompanied with no doubts or uncertainties. Weak spots in chain and bridge bolts, when tested in their full length, are discovered to a certainty, and though of course this is impossible with boiler plate, it is desirable to approach it as as an incorrect test might endanger life and limb. The investigation, therefore, should be thorough, searching and conducted with the greatest care, accompanied with no doubts or uncertainties. Weak spots in chain and bridge bolts, when tested in their full length, are discovered to a certainty, and though of course this is impossible with holler plate, it is desirable to approach it as much as possible. The objections to a short section are many. First, it gives too much advantage to the specimen, because the vol-

is a considerable swell, then a reduced section again, but slightly larger than at the fractured part—(until a specimen is actually parted it is impossible to tell at which attenuating point the piece will break). To obtain the exact point at which any material yields permanently, is a very delicate operation, and as the "limit of elasticity," as it is called, is important to discover to grade the material, provision should be made to do it with as little trouble as possible, and in the most accurate manner. The cut in the most accurate manner. by our Superintendent, differing from any other we have seen for the purpose. Fig. 3 is a device for measuring elongations. The is a device for measuring elongations. The object of making the measuring instrument of this form, which is seen in position ready for operation, is to obtain the extension of the specimen through its center; this is readily done, as may be seen by placing the two pointed ends of the apparatus into center punched holes, in both ends of the test piece, instead of fastening it by screws or otherwise to the sides as is usual. This prevents any false readings on account of side strains, or by the bending of the specimen when yielding to readings on account of side strains, or by the bending of the specimen when yielding to the pressure. The long arm extending out to the graduated arc, exaggerates the movement sufficiently to plainly show r-roop of an inch, and can be made to be greater if desired. The instrument is light and strong, being made of steel, and can be attached to specimens in an instant. Although made expressly to find the "limit of elasticity" expressly to find the "limit of elasticity," still it will answer for the elongation also to

other it will answer for the elongation also to a certain extent, as it is now represented. One of the greatest obstacles in the way of testing plate or other flat metal fairly, was the difficulty of obtaining a proper and central grip of the specimen. There are several causes of iron breaking from one side or tearing. Sometimes it is in the iron itself, one side being more ductile than the other: sometimes the iron is a little thicker other; sometimes the iron is a little thicker





more truthful result. This is desired by the honest investigator, and protects and encourages the honest manufacturer, who, in competition with manufacturers of inferior iron, receives no more credit than the latter, the short fillet not always developing the inferiority of the common iron. On account of the irregularities and the general unevenness of the shape of fracture, it is a matter of almost utter impossibility to make the measurement of reduced section with accuracy, and the results and the necessary calculations become unsatisfactory and doubtful.

doubtful.

The following cuts, made from specimens brought to us to be tested, illustrate points too plain to be doubted. Fig. 1 is a piece of flat iron 20 inches long, 2 inches wide, and ½ an inch thick. It will be observed there are seams shown on the edge, and again round places intervening. This illustration speaks for itself, and it is scarcely necessary to say that had this piece been a short one, the bad qualities of the iron might not have been discovered. It also illustrates a difference of elongation between spaces of an inch, punch-marked previously to being tested, showing that different portions of the same pieces of iron differ considerably as to ductility. This irregularity in the quality of one piece of iron will account for mysterious differences often found when testing specimens from the same plate (which is attributed to carelessmess in making the tests, or else the manchine is held responsible). Fig. 2 is a sound piece, which is given to show the manner in which iron breaks in some instances. Immediately behind the fracture The following cuts, made from specimens

ume of material is so near to the reduced portion that the fibers of the metal flow into it and act as a feeder, or as "reinforcements from behind;" secondly, the chances are in favor of the strong places being hit upon for the position of the fillet; thirdly, it is utterly impossible to find the percentage of elongation properly, for the circles cut on either side, which reduce the specimen to the size required, leave nothing but a line at the breaking point, which, having neither breadth nor thickness, cannot be measured in the stretch; fourthly, the fact of its being almost universally discarded, renders comparisons with tests made by others doubtful, if not useless, unless the form of the test specimen is known, and then an uncertain allowance must be made. The parallel section lessens the chances of revealing the faults and flaws, and gives a more truthful result. This is desired by the honest investigator, and protects and encourages the honest manufacturer, who, in joints, givos a universal movement which must secure a central pull to the specimen, beyond all doubt.

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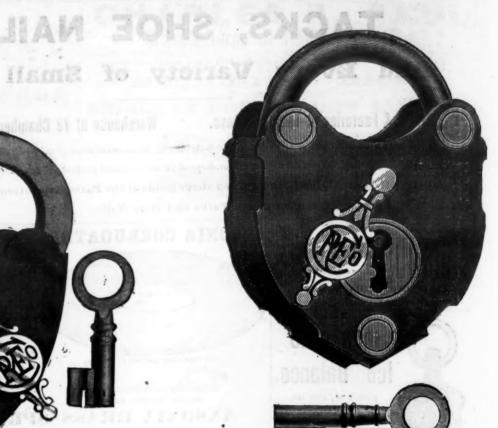
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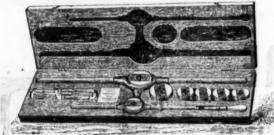
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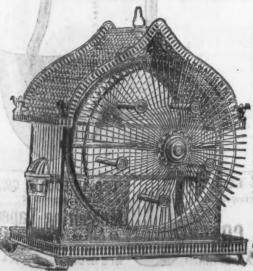
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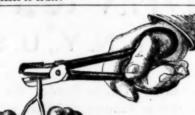
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special purposes to order,

Machines to straighten and cut wire by hand; to rivet together articles of hardware; to drill butts and other hardware; to mill butts; to drill or countersink several holes at once, close together or far apart, on a regular or irregular line; to drill, tap, mill and thread small articles of hardware, such as thumb screws, thumb nuts, &c.; to spin plain or ornamental caps on picture nails, tassel hooks, &c.; for grinding, buffing and polishing; to drive screws into locks, knobs, &c.; foot and hand presses and special power presses to order.



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DEXTER SPRING CO., Hulton, near Pittsburgh, Pa., U.S. A. competition is now gradually, but irresistably, it seems, driving them out of the market.

applied to the lever and hand wheels of several styles of machines, a counterbalance was kept up as the strains were applied and weighed on the balance beam of the machines. It was found that the flatthreaded screw, with collar to take the thrust or pressure as usually made, yielded but 14 per cent. of useful effect, the rest being all consumed by friction; the same kind of screw, with a worm gear, yielded but 2 per cent. of actual work, while the hydraulic power gave 72 per cent. of useful effect. As we said before, the screw has its advantage, or rather, but one really great advantage, or rather, but one really great advantage, that of a steady retaining power. But as a steady power can be given to the pump by the use of three pistons, and a retaining arrangement or "strain holders" can be attached, the screw therefore is not the best, especially for heavy strains; and where the specimens are long and the fibers tenacious, the gearing necessary to make it possible to exert a strong pull must be tedious to operate; and to simply stretch out a specimen one inch would be beyond the power of most men not accustomed to hard labor, while a stout boy can do it with ease many times with the hydraulic power. Then, again, the great space above and below the floor required sometimes for the screws and gearing, makes it very objectionable, and this, together with the other reasons given, make the hydraulic-power machines) with levers and weigh beams more satisfactory. Besides all the points mentioned in regard to correct testing, none is more important than sides all the points mentioned in regard to correct testing, none is more important than to prove the correctness and accuracy of the to prove the correctness and accuracy of the weighing system. Unless testing machines are made up to the United States standard of weight for this country, there cannot be any uniformity in testing. Every machine should have its leverage carefully tested, and when practicable, be weighted up to full capacity with standard weights. Notwithstanding other methods are used for weight.

Also, results of some tests made for one of the large foundries of this city of a new mixture of cast iron; the grain was fine and handsome, and nice to work. One specimen stood 33,840 lbs. per sq. in.; a change in mixture again gave 36,700 lbs. per sq. in., an unusual strength for iron not intended for guns.

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The "Universal Lifting Jack" is a new on ther heavy articles, and is a decided novelty. It combines the good features of both the screw and lever jacks, having as both the screw and lever jacks, having as long a range as the screw jacks, with the quickness of action of the lever. It consists of a circular base, which carries a vertical hollow standard of cast iron. In this standard there is a nut, in which a screw works very much after the plan of a piano stool. This screw, for the sake of lightness, is made hollow. At the top of the screw thread is a collar which carries a lever and heardle, by means of which a head with handle, by means of which a head with three steps, upon the top of the screw, can be raised and lowered in the smallest size about 2 inches. When the handle is lowered the lever and connecting link form a continuous straight line, and no locking is needed in order to sustain the load. The screw in this size can be run out 8 inches, so that the jack will stand, when ready for lifting and without the wooden block upon which it is intended to be mounted, 26 ½ inches high, intended to be mounted, 20½ inches high, giving a range of lift great enough for any kind of vehicle which it is capable of supporting. Each step is cushioned with rubber in such a manner that the paint or varnish upon a carriage will not be injured by using the jack. Besides the sizes mentioned, there are three others made suitable for all kinds of work up to the lifting of wagons, heavily loaded trucks, railway care, &c. As the principal members of this jack are hollow, the weight is very small, while the material, cast and wrought iron, gives ample strength. cast and wrought iron, gives ample strength. It is made by the Dinsmore Manufacturing Co., 235 Washington street, Boston, Mass.

The Shipping of France.—Much earnest discussion has been going on in France of late on the present state of its shipping interest and its poor prospects for the future. To aid shipbuilders and shipowners, a bill has been introduced into the Chamber of Dankies of the control of the chamber o wherever it is known it is rapidly superseding all others for pleasure vehicles. It is especially recommended for use on the rough roads of new countries, as its peculiar construction relieves the strain on the vehicle and shock to the passenger, while the high grade of material used reduces the probability of breakage to a minimum.

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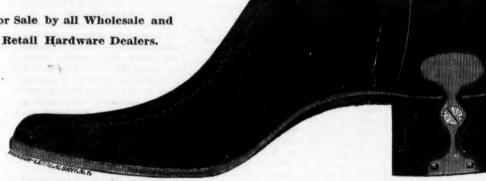
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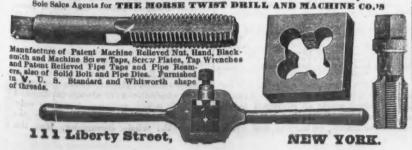
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wsing Beetles, Hawsing and Calking Irons all kinds of Handles, Sledge, Chisel and Ham COTTON AND BALE HOOKS, ted Feb. 13, 1877; a new combination of H

456 E. Houston St., New York City.

Improved Flush Sliding T Bevel.

We show herewith an illustration of an improvement upon the ordinary sliding T bevel, used by all woodworking mechanics. A brass lever for securing the blade at any desired angle has been substituted for the old style of thumb nut, and the bevel can be used in one hand with perfect convenience, while the workman holds his scratch awl or pencil in the other. The lever can be operated readily by the thumb of the hand in which the bevel is held, and the blade can be clamped more firmly, with the same outlay of strength, than by the old method of fastening, owing to the greater purchase given by the lever. The sides of the handle are depressed at the clamping end, and the lever is below the main surface of the handle. The tool will lie on a beach or in We show herewith an illustration of an lever is below the main surface of the handle. The tool will lie on a bench or in working with it equally well with either side of the handle down, both sides being flush. These bevels are manufactured by the Stanley Rule and Level Co., of New Britain, Conn., under letters patent, and are sold by them at the same prices as the ordinary T bevels.

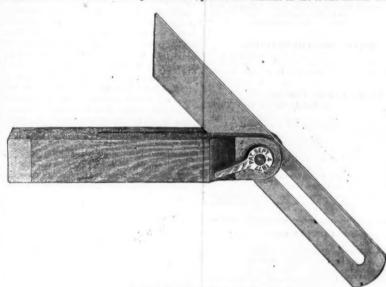
England and the Canadian Tariff.

pire, and to devote the energies and abilities which God has given him to that object, is a better Briton than any member of the narrow, illiberal school of which Mr. Bright is the exponent. But the Canadian who stands ready to welcome foreign interference as a means to gaining a party victory, is a fit associate of such bogus Liberals.

We should deeply regret it should the British government attempt to curtail our political liberties by any arbitrary interference with our fiscal legislation. We do not believe that there is the remotest chance of their doing so. But were the unpatriotic longings of our Canadian free traders to be realized, we have confidence that the manly, independent spirit of the Canadian people would meet the difficulty in a becoming and creditable manner.

Trade Unions and Trade in Sheffield.

The Sheffield Telegraph reports a speech made recently by the Mayor of that city (Mr. Ward), who said that in his opinion the distress in the town was owing in a great measure to the trade unions of Sheffield. It was within his own knowledge that a very large contract was offered to a large manu-The Toronto National says: English free traders are exercised about our new tariff. Mr. Bright has made inquiries in the House of Commons for the purpose of ascertaining what course the imperial government intend taking. The reply of the Colonial Secretary was, in effect, that so long as the tariff did not interfere with treaty obligations, the home government had nothing to do with it. Drowning men catch at straws, and so the Grit press of Canada fondly hug the idea that perhaps the Queen will disallow the tariff, and with somewhat questionable facturer not far from there. The proprie-tors of that manufactory had taken con-



IMPROVED FLUSH SLIDING T-BEVEL.

right of the colonies to regulate their own fiscal policy without any interference from Dowing street, is now pretty well/recognized. The aspirations of the Dominion for national greatness will not only be cheerfully tolerated, but warmly welcomed by Earl Beaconsfield's government, which is not controlled by any narrow views in this respect. But even should there be a change of government in Great Britain; even should the selfish views and policy of the unpatriotic, gold-worshipping, Manchester schools become predominant, they would not dare attempt to coerce us in a matter of this kind. And Canadians would be unworthy of the race from which they spring, were they to tolerate or submit to such interference. We are not a Crown Colony. We have the right of self government, and we will jealously guard that right. The Canadian people, by an overwhelming majority, have declared that the principle of the protection to native industries shall have a fair and honest trial. They have declared their belief that such a policy is the creating and the protection of the p have declared their belief that such a policy is the one suited to the requirements of the country—the only one which can develop our resources, and enable us, to conquer for would be a return of good trade at so early a bour as they all lorged for our resources, and enable us to conquer for ourselves the position among the nations which those resources and the industry of our people justify us in aspiring to. Such is the expressed will of the Canadian people, and that will must not be interfered with by any one. Advice from the home government will meet with respectful attention, and, when possible without grave injury to our own country, the interests of the empire will be preferred by Canada; but dictation or high-handed interference had better not be attempted. Almost without remonstrance we have seen our interests ignored, and be attempted. Almost without remonstrance we have seen our interests ignored, and even sacrificed, by treaties between Great Britain and the United States. Nay, we have willingly, even cheerfully, abandoned just and proper claims rather than injure the empire, but above and beyond all other considerations, superior even to our devotion to British connection, is the deep-seated tion to British connection, is the deep-seated and unconquerable determination to make this Dominion, the land of our birth or adoption, the powerful, prosperous country which a bounteous Providence has given us the means of making it.

That Mr. Bright and the Manchester school will agitate for a severance of the colonial tie we neither admit nor deny, givenly because we have no means of know.

patriotism they gloat over the idea that Mr. Bright and the Manchester school will probably begin an agitation for a severance of the colonial tie, at least so far as Canada is concerned.

In the first place, there is not the faintest chance of the tariff-meeting any opposition on the part of the home government. The right of the colonies to regulate their own fiscal policy without any interference from Dowing street, is now pretty well'recognized. The aspirations of the Dominion for national greatness will not only be cheerfully tolerated, but warmly welcomed by Earl Beaconsfield's government, which is not controlled by any narrow views in this respect. But even should there be a change of government in Great Britain; even should the selfish views and policy of the unpatriotic, gold-worshipping, Manchester schools become predominant, they would not dare attempt to coerce us in a matter of this kind. And Canadians would be unworthy of the race from which they spring, were they to tolerate or submit to such interference. We are not a Crown Colony. We have the right of self-government, and the called upon the leaders of the union, and were distinctly told that they must not accept the 10 per cent. reduction. The consequence had been that the order was now being executed in Belgium, and the working classes in Sheffield were suffering to that extent. But this was not all. Machines the for the result had been that those machines had been sent back to Belgium, and carriage springs were now being executed in Belgium, and the working classes in Sheffield were suffering to that extent. But this was not all. Machines and the result had been that those machines had been sent back to Belgium, and carriage springs were now being executed in Belgium, and the working classes in Sheffield were suffering to that extent. But this was not all. Machines and the result had been that those machines had been sent back to Belgium, and carriage springs were now being executed in Belgium, and carriage springs were tabooed by the working with him to find the trade unions doing so very much to prevent the expansion of the trade of Sheffield. He hoped the time would come when the trades unions would see the desirability of working hand in hand with the employers, and so bringing about better trade than was the case at the present time. He was not one of those that looked forward to the resumption of better trade at a case. an hour as they all longed for.

The New Jersey Labor Statistics.—A year ago the Legislature of New Jersey passed a law creating a Bureau of Statistics upon the subject of labor. The first report issued under its provisions is now at hand. Enough has been done already to convince the citizens of New Jersey what impetus may be given to the productive energies of a State by the study and exposition of its resources and industrial conditions. One of the interesting points touched in this report is the falling off in the cost of labor between the years 1872 and 1877. It is noteworthy how much greater is the percentage of reduction the years 1572 and 1577. It is noteworthy how much greater is the percentage of reduction in unskilled than in skilled work. In the latter case the decline runs from 8 to an occasional maximum of 30 per cent, while in the former it ranges from 20 to 50 per cent. And here we may observe in passing, that although the cases of women and children reported are relatevely few, yet the average of reduction seems to be nearly identical. of reduction seems to be nearly identical with that reported by heads of familes. In several trades which have suffered most acutely from the prevailing commercial de-pression—such, for example, as the brick, pig iron, and mining industries—the normal colonial tie we neither admit nor deny, simply because we have no means of knowing whether they think it would pay. The men who, calling themselves "Liberals," opposed the factory bill; who, that they might make money by it, were willing to condemn helpless children to work their lives out in factories, denying them the rest which nature demanded, are not apt to be actuated by any motives higher than self-interest, even when dealing with a question on which the welfare of their country depends. The Canadian who is honestly desirous to build up this portion of the em-

The Iron Age

Metallurgical Review.

New York, Thursday, April 3, 1879.

- Publisher and Proprietor DAVID WILLIAMS JAMES C. EAYLES -Business Manager JOHN S. KING - - - -

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Trirty-fifth Page. - New York Wholesale

Thirty ninth Payr.—Philadelphia, Buffalo bleago and Pittsburgh Hardware and Meta Forty-first Page.—Boston and St. Louis Hardware and Metal Prices.

In another column we print a second invitation to American manufacturers to establish branch works in Nova Scotia. We have not noticed any eagerness on the part of the manufacturers addressed to accept the first invitation, but perhaps they are getting ready to do so "unbeknownst" to us. We imagine they will first determine by experiment whether they cannot hold as much of their Canadian trade as is profitable, without going to the expense of building factories to manufacture materials which can be had cheaper here than on the other side of the line. Let our Provincial friends possess their souls in patience. If there is a promising opening in Canada for manufacturing, there are plenty of capitalists in the country to take advantage of it. It is probable, however, that they will wait until protection shall have been tried awhile, to likely to re-elect the party which now controls the political destinies of the Dominion.

The Bessemer Steel Trade.

The American Bessemer steel trade is in a remarkably healthy condition. Excessive competition has not reduced prices to or below the level of the cost of production, as is the case in too many other lines of American manufacture, outside of the iron trade as well as in it. The demand for Bessemer steel and the producing capacity of the works keep pace handsomely. The mills, as our market reports have recently said, are in a "chronic state of fullness" as to orders. In spite of the depressing influence of the "hard times," which we believe are now about past, the prices received for Bessemer steel rails have remained almost stationary for about two years, the slight variations from the ruling rate in that time having generally been in an upward direction. It is a great deal gained when the manufacturers of any article can in these times successfully oppose the efforts of buyers to beat down prices.

Two influences, both artificial, have operated to the benefit of the American Bessemer steel trade, and both of these influences illustrate the advantages of artificial barriers against the promiscuous competition which results when trade matters are left in an unprotected natural condition. One influence is the tariff, and the other is the ownership of the Bessemer steel machinery patents for the United States by the Besse mer steel companies themselves. The trade is protected by the tariff from injurious foreign competition, and by the ownership of the patents it can protect itself from reckless domestic competition. These two safeguards have enabled the American Bessemer steel trade to regulate itself, and the consequence is that to-day prices are so adjusted as to be neither exorbitant to the buyer nor destructive to the manufacturer.

The evil results of indiscriminate competition in the Bessemer steel trade are more observable in England than anywhere else. There can be seen the best example of the ruinous effect of the absence of all restrictions on trade. While for obvious reasons they needed no 'tariff to protect themselves from foreign rivals, Bessemer steel establishments have increased and multiplied in England far beyond the capacity of the home market and of open foreign markets, the manufacture being open to any one with the necessary capital. Having driven the English iron rail mills out of the business, they are now waging a war almost of extermination with one another. Prices of English steel rails have been forced down to a point which must be under the cost of production, and there seems to be a probability of a further decline. Prices of Besseme steel plates, sheets, shapes and bars will, it is very likely, drop in sympathy with rail quotations until the finished iron mills meet the fate of the iron rail mills, and then there is no doubt that makers of these steel products will begin to prey on one another. The more costly open-hearth steel process will have but little chance in such a contest. Nothing can now restrain the combatants in this warfare but bankruptcy, and that must be fast approaching for many of them.

If the policy of free foreign competition had been adopted in the United States after our Bessomer steel works were built, and when an outcry was made against the creation of a "monopoly," there would to-day have been scarcely a Bessemer steel establishment in operation on this side of the Atlantic. It is an absurdity to think of making steel rails here to sell at \$22 to \$25 a ton, which would have to be done if the tariff did not stand between us and the foreign manufacturers. Again, if the American Bessemer steel companies had not, with commendable sagacity, ourchased and proled the Bessemer steel patents for this country, there is no reason to doubt that they would be threatened with as great distress from home competition as the English steel makers. The erection in the United States of a couple of additional Besemer works, would make all the difference between a slight profit and a heavy loss. The manufacturers of iron rails and of iron plates, sheets, shapes and bars are, however, as deeply interested as the Bessemer steel manufacturers themselves in keeping the Bessemer steel trade confined to its present limits. Thanks to American skill, every year sees every American Bessemer plant increasing its output. This is an expansion of the trade which keeps the existing works abreast of the growing demand, leaving no necessity for the establishment of new Bessemer works.

The capacity of the existing establishnents is fully equal to the consumptive demand, and there is, consequently, no overproduction and no endeavor to force part of the iron trade out of existence. Should the demand for Bessemer steel continue to grow as rapidly the coming year as it has the past year, the idle establishment at St. Louis can be put into operation to relieve

the pressure on the works now active. The difficulty in arranging to manufacture Bessemer steel will, of course, operate somewhat to the advantage of the openhearth steel process, into which capital may be diverted that would have gone into Bessemer works. Establishments for the manufacture of open-hearth steel are in-creasing quite rapidly in this country, but as most of these works are of comparatively limited capacity, it is not likely that see if it suits the people and if they are they will at once prove formidable competi-

tors with the Bessemer steel works for a share of their business. At present the American iron and steel trades seem to have excellent prospects; the iron mills, the crucible steel works, the Bessement works and the open-hearth works, all ap parently move in the same channels, with degree of harmony somewhat marvelous in this age, when steel is expected to supplant iron everywhere. But this harmony would be utterly destroyed if the tariff were reduced sufficiently to permit an influx of foreign Bessemer steel, or if additional works were erected to manufacture Besse mer steel in the United States.

Japanese Trade.

During the quarter of a century since the American expedition under Commodore Perry, and the subsequent English expedition under Admiral Sir F. Stirling (1854), the trade of Japan with the United States and other countries has slowly increased, more especially during late years, the Japanese adopting the advantages of modern civilization more and more as they become familiarized with it. The Americans, having taken the initiative in redeeming this thriving and intelligent nation from almost total self-imposed exclusion, which had lasted some two centuries, naturally take an interest in its welfare, and are anxious to retain a good share in the impor-tant traffic thus added to the world's commerce. Our Pacific States are, fortunately, so admirably situated that eventually, as modern usages spread in Japan, a large proportion of its dealings with the outside world will be transacted between San Francisco and other leading ports on the Western coast and Japan, while the Suez Canal enables us to reach the latter in a compara tively short time from the Atlantic.

Japan was visited by the Portuguese in 1452, but they were never able to gain a asting foothold in the islands. They introduced Christianity, but it ended in massaere, owing to an alleged conspiracy of the Jesuit fathers against the State. After a persecution of forty years' duration, a horrible slaughter took place, and not only the Portuguese, but Christians of every nation. were expelled the country, and the most effectual means taken for preventing their return. After a while the Portuguese and Dutch traders ventured there again, but the intrigues of the latter between 1611 and 1640 led to the expulsion of the Portuguese a second time, the Dutch merely retaining an unimportant trading post at Desima until the advent of Commodore Perry.

It is all the more creditable that a nation left to its own resources for such a long time should have embraced modern ideas and modern inventions so readily. Nor is it surprising that, while doing so, the ruling classes in Japan should have fallen into some extravagances-as, for instance, the piling up of a large public debt and a currency system leading to some difficulties. The population being thrifty, sober and intelligent, and the country intrinsically rich, it is, however, to be presumed that a better financial system will be adopted ere long, and the obstacles to further material progress removed.

The Japanese Empire is made up of the

tonowing islanus:			н
Sq		Population	Ŀ
Nipon	87,645	25,478,834	ľ
Kioushiou	15,107	4,986,613	Н
Shikokou	7,107	0,484,538	
Iki, Tsoushima, Awadji, Oki			
and Sado	1,012	362,177	1
		-	1
Japan proper	110,871	33,312,162	ľ
Yeso and Kourile Islands	36,368	144,060	
Rioukiou	815	107,073	
Bonin Islands	33	75	
m-4-3	0.00		7

Total 148,088 33,623,379 The number of foreigners in Japan in 1877 was 2492, against 2673 in 1876. In Yokohama there are 26 American firms and 240 Americans; at Nagasaki, 3 firms and 38 Americans. Of English firms there are 54 at Yokohama and 635 Englishmen; at Nagasaki, 4 English firms and 113 Englishmen. At Osaka there is but one American firm and o Americans.

The principal cities in Japan are the following: Tokio, 813,500 inhabitants; Koumamotou, 300,000; Kioto, 238,663; Osaka, 281,119; Kagosima, 200,000; Yokohama, 61,553; Kanasawa, 60,000; Nagasaki, 47,-412, and Niigata 33,772.

The public debt of Japan amounted in 1877 to \$316,126,844, which included \$121,-054,731 paper money, and \$13,399,016 of foreign indebtedness in the shape of 9 and 7 per cent, bonds; the balance consists of internal debts in the shape of 4 to 10 per ent. bonds.

The army, on a peace footing, counts 31,680 men, and on a war footing 46,350 men. The navy consists of 16 vessels (mostly iron-clads), with 6820 horse-power engines and 78 guns, 200 officers and 2247

The following has been the trade movement through the principal ports, in thou-

sands of dollars 1877. Yokohama. Hiogo and Osaka. Nagasaki. Hakodade. Niigata.	Imports. 19,490 4,832 1,578	Exports, 15,628 4,694 2,079 442 24	Total 35,11 9,52 3,65 44
Della F	25,900	22,867	48,76
1878. Yokohama Hiogo and Osaka Nagasaki. Hakodade Niigata	4 155 1,c63	Exports, 21,432 3,501 1,960 777	Total 40,27, 7,650 3,003 804
	34,087	27,670	51,757

The import into Yokohama alone, in 1875, was \$21,954,000, and the export from there, \$12,467,000. The imports consisted of the following goods: Cotton Woolen Rice, su-goods. goods, gar, &c. goods. merch dge. 1875. 1875. 1875. 1875. 1875. 1875. 1875. 1876. 1876. 1836. 1876. 1876. 0,052,708 3,444,494 840,361 1,000,611 9,740,141 The ensuing details show the nations

traded with, as well as the articles ex-#7,762.550 1,621,317 2,959,062 5,441,367 7,461,915 1,661,551 44,293 494,802 120,651 ARTICLES EXPORTED.

\$13,969,371 Camphor.
536,680 Dried Fish
1,902,271 Mushroom
5,033,410 Sea weed.
1,301,075 Isinglass.
424,448 Tobacco.
208,733 Fans. MARITIME MOVEMENT, 1877. -Yokohame Ships. Ton'g Ships 120,378 Total. xR 214 309,178 Hakodade.— Ships. Ton'ge Ship 3,933 3,771 86,578 13,301 Japanese. Other flag

Total 23B 160,227 28 8,800 There were entered at Niigata in 1874, 4465 vessels of a joint capacity of 33,226 tons, but six of which were under foreign flags

Of railroads there are now in operation the ine between Tokio and Yokohama, 18 miles the one from Hiogo to Osaka, 20 miles; and from Kioto to Osaka, 27 miles; together, 65 miles. There are eight central post offices— at Tokio, Iaykio, Yokohama, Osaka, Motonura, Osdzu, Iakay and Kobe. There were altogether on June 30, 1877, 3744 post offices forwarding, during the fiscal year then ended, 22,912,838 letters, 6,764,272 postal cards, 856,637 free letters, 7,465,582 newspapers, 322,642 samples; together, 38,321, 971 items of postal matter, against 30,162, 614 the previous year. The expenditure was \$794,353, and the revenue \$697,846. Postal avings banks were established in 1875, and they have been received with great favor. During the last six months of that year only 19 banks were founded, and the amount deposited was \$6108. For the fiscal year endng last June, there were 292 such banks, with \$208.944 deposits. There are eight telegraph lines in the country, and in 1874 there were 1848 miles in operation, forward ing during the year 396,289 telegrams, and

earning \$114,560. If the Japanese people were illiterate, these extraordinary results could not have been obtained; but common-school education is rapidly spreading, and there were last year 24,217 primary schools, with an average attendance of 1,828,747 children. In 103 schools English, French, German, Russian and Chinese were taught.

The articles of Japanese production which are chiefly imported into the United States

re	JAPAN'S SILE EXPORT. Bales. 1877-78.	Bales. 1878-79.
0	London	3,258 6,090 1,436
	Total	TO 784

Japan takes from us a variety of goods but principally petroleum, the consumption of which takes proportions beyond all expectations in the Empire. Our import from Japan during the fiscal year 1876, amounted to \$15,508,170, and during the subsequent \$13,689,433. domestic products amounted to but \$1,098,-457 in 1876, but rose to \$1,250,057 in 1877. The principal articles of domestic production we have exported to Japan have been as follows:

IN 1877.

\$3,090 Rosin........ 1,785

Woodenware 8,536	Paper 45,44
Wine 1,581	Perfumery 2,27
Clothing 3,657	Quicksilver 17,000
Manfd. tobacco 3,719	Scales 2,22
Liquors 7,013	Seeds 5,00
Oats 1,338	Horses and sheep 27,53
Wheat 8,000	Clocks
Flour 41,317	Cotton goods 11,29
Soap 2,801	Drugs 26,000
Maizena, &c 4,680	Skins 7,144
Spirits tupentine. 4,164	Manuf. of iron 57,823
Carriages 2,100	steel 5 948
Coal 3,420	" leather 82,50
Manuf. of copper 40,000	Petroleum 494,323
Fancy goods 1,018	Cheese 108
Fruit 9,008	Provisions 14.830
Glassware 26,030	Refined sugar 4,957
Hops 1,047	Agr. implements. 7,280
Rubber goods 3,967	Billiard tables 1,616
Lamps 2,684	Blacking 9,980
Boots and shoes 1,262	Books 14,670
Marble 6,362	Manuf. of brass. 2,130
Scientific instr'ts. 11,327	Navy bread 1,478
Scientific instr'ts. 11,327 Musical 2,562	
IN I	378.
Horses and sheep \$9,199	Manufactures of
Clocks 95,611	leather 128,537
Cotton goods 50,052	Petroleum1,305,713
Drugs 46,474	Cheese 5,717
Skins 22,384	Provisions 23,246
Manuf. of iron 38,952	Refined sugar. 9,952
" steel., 28,460	Ammunition 91,101
Ag we have shown 1	here are but few for-

are, therefore, nearly all consumed by the met with hearty response, but it is only natives, and considering the dense population of the islands, we have to deal with a stirred the whole community, that this

market where the consumptive capacity is simply enormous. There is, consequently, a field of great promise for American goods, the more so as the Japanese have no prejudices in favor of European goods to our dis-advantage. We have also shown that next to the English, American firms are most numerous; we are, consequently, well repre-sented, and taking from there a large amount of produce, besides possessing, as we do, steam communication with Japan from California under our own flag, the are none of the many drawbacks in this trade constantly hampering our intercourse with the remoter countries of South America.

The Bar Iron Controversy.

Our article in last week's issue, entitled The Quality of Pittsburgh Iron," has called out an interesting, but rather sharp correspondence, which we print on another page. It is evident that our remarks have been misconstrued—which is to be regretted, though perhaps they are more susceptible of misconstruction than we had supposed, Consequently, we permit our correspondents to say what they will in reply. We are always willing to open our columns to correspondents who seek to set us right on errors of opinion or of statement; but in this particular instance, we deem it expedient to say in advance that we shall decline to surrender space for a sectional discussion over differences which cannot be reconciled by argument. We hope that the friendly interchange of views suggested by one correspondent, having for its object the suppression of local jealousies and the saving of a great industry from ruin, can be had in the councils of the trade, and that the effort on the part of manufacturers to cut each other's throats will give place to a desire to promote the best interests of the whole trade. At such a time concealment of the facts, or a wrong explanation of them, will only lead to new evils and defeat the measures by which it is sought to reform those which already exist.

One correction we desire to make, which has been rendered necessary by an omission which seemed to convey a meaning we did not intend. Our remarks concerning the receipts of old rails in Pittsburgh during the past quarter should have read as follows: As we have often seen it asserted that large purchases were made in Philadelphia for the Pittsburgh market, we learn, on inquiry, that for the three months ended March 15, the entire re-ceipts of old rails at Pittsburgh from Philadelphia were 178,760 pounds, or, say 90 tons." This is correct.

The Iron Age is, in the largest sense, a national journal, uninfluenced in its editorial management by local prejudices or interests. Its Editor is liable to mistakes, and makes no claim to infallibility of judgment; but our Philadelphia friends would do us a great injustice were they to suppose that our statements concerning the condition of affairs in the Western market, made on information and belief, were inspired by a desire to promote or hurt any local interests. We do not, however, imagine that we have been misunderstood to that extent. The condition of the Western market for bar iron is certainly deplorable, and cannot be explained except on the ground that the business there is conducted with a total disregard of sound business principles.

We regret that any of our correspondents should have introduced personalities into their letters. To fix the authorship of an article which bears no signature, is to venture an assumption based upon a mere guess. More than one "salaried officer of a local iron association" has been a frequent and acceptable contributor to The Iron Age, and we have yet to learn that a gentleman occupying such an official position in the trade is necessarily "too much blinded by sectional prejudices to take a broad view of the situation." In any event, an editorial appearing in our columns becomes the impersonal utterance of The Iron Age, and ould be so regarded. This will not the nature of our utterances for better or worse, but it will tend to preserve the amenities of newspaper discussion, which are apt to be forgotten when personalities are indulged in.

Insurance Against Accidents in Coal Mines.

In many matters affecting the managenent of coal mines, and in dealing with the terrible contingencies which sometimes arise in connection with them, the English, probably owing to greater urgency, have led the way in devising means of affording relief and protection. It is well known that English legislators and English engineers have most earnestly, and in a measure successfully, investigated the causes of colliery explosions, and have drawn up and enforced the most admirable system of protection against their occurrence. Notwithstanding these efforts, terrible disasters startle the world from time to time, so that but too often the aid of the charitable must be asked to lessen the sufferings of the miners and those dependent upon them for support. With the energy shown in devising measures of protection, the English have striven to organize As we have shown, there are but few for-eigners in Japan; the goods we send thither of the charitable have always in England

generosity can be relied upon. It fails to reach the many minor accidents of daily occurrence, which in the aggregate cause so much misery, and which so easily pass unheeded and uncared for. It is only lately that practical and proper means of relief, based upon the principles of self-support and co-operation have been adopted, and it is to this system that we wish to call attention, with the view of encouraging its adoption in this country. The system referred to is the establishment of relief societies on to is the establishment of rener societies on the part of the miners, in co-operation with mine owners and aided by the general public. It has been adopted in six different coal districts in England and Wales. The general plan is that the miners shall contribute a certain fixed sum weekly from their wages, to which the colliery owners add a specified percentage of the total thus accumulated, the fund being further swelled by regular donations and contributions from the charitable, and by funds subscribed on the occasion of great colliery disasters. The so-cieties are thus practically managed by the miners themselves, aided by honorary members representing the mine owners and patrons. The fees are small, the scale of contributions and benefits being as follows: Any person employed in or about a coal mine entitled to membership by a payment of 3d. (6 cents) per week (benefits commencing from date of entrance). Boys under 16 years of age are considered half-members, and pay 1 1/2d. (3 cents) a week. The benefits are: To the parents of a boy who gets killed, £12 (\$58.44). If above 16 and unmarried, \$23 (\$112.21). The widow of a married member, £5 (\$24.35), with 5/(\$1.22) a week for life or until remarriage, and 2/ (48 cents) a week for every child under the age of 13 till that age is attained, whether the mother marries again or not. An extra 1/6 (36 cents) per child when left without mother. In cases not fatal 6/ (\$1.46) a week is paid for 26 weeks; when, if the disablement continues, 8/(1.95) a week is allowed permanently. Besides these benefits a superannuation is provided amounting to 6/(\$1.46)

These figures, of course, would not directly apply to the circumstances in this country. It would be necessary to raise them throughout at a rate corresponding to the ratio between a miner's wages in this country and in England. It would, however, be wise to retain one feature which seems to have been provided for in the above-to make the contributions so large that they would more than cover the probable amount of benefits drawn, as based upon the statistics of mine accidents of the district or country. By this course a permanent fund is accumulated by which any sudden emergency may be met, thus guarding against distrust of the efficiency of the relief funds by failure to respond to sud-den large calls. The English Miners' Relief Fund system has already undergone such a test in the case of the explosion at Pemberton, near Wigan, the unfortunate miners having been members of the Lancashire and Cheshire society. As an instance of the financial position of such a society, we may mention that of the West Riding of Yorkshire, which, though it was only started in March, 1877, with 1500 members, numbered on the 31st of December, 1878, between 5000 and 6000 members, whose funds, after distributing £1640 and paying for management, amounted to more

One point should be carefully considered in connection with such organizations-a point which is reached in England by registering as friendly societies according to act of Parliament—that the funds thus collected be secure from any attempts to squander them for any object. There is always a temptation on the part of the miners to divert the moneys so collected into uses for the furtherance of their own ends, such as the maintenance of a strike; and it too often happens that the managers are led into individual trade operations or speculations. It limit by law the nature and class of the investments to which such funds should be trusted. If wisely conducted, relief societies on this plan would be productive of much good, and would have an excellent effect upon the miners, making them more independent and more self-respecting than

The Philadelphia Industrial League have issued an address on the subject of general reciprocity, from which we quote as follows:

We see with interest that Canada, in her turn, We see with interest that Canada, in her turn, is giving her adhesion to the policy of fostering home industries. It must be admitted, however, that the smallness of her population and of her home markets, the exclusively Northern character of her productions in contrast with the almost unlimited variety of ours, and the immense extent and expensiveness of her customs line, render her an unfavorable subject for a separate experiment. Moreover, her system will be incomplete and ineffective if it does not protect her against the transatlantic competition which is by far more formidable than ours. more formidable than ours

Obviously, no policy of tariff legislation hostile to the United States can long be sustained in Canada, since her chief markets for barley, lumber, fish and other products, as well as her indispensable access to the sea across our territory, can be cut off at pleasure whenever her tariff policy shall have become sufficiently annoying to provoke retaliatory legislation from our government.

when she shall ask for commercial union and equality under our tariff system, it will doubtless be to our interest that her advances shall be met by a frank acceptance; but meantime no project for a delusive reciprocity treaty should be entertained for a moment. Our former unsatisfactory experiment in that direction tended to the estrangement of two populations who are remarkably free from such animosities as often embitter the inhabitants of opposite sides of a frontier line, and whose real interests and aims are to a great extent intrinsically similar and accordant.

Is a similarly broad spirit should our intercourse with Mexico be treated. That spacious and magnificently endowed region, capable of course with Mexico be treated. That spacious and magnificently endowed region, capable of yielding to us all that has been hoped for from Cuba and Brazil, and of taking from us vast quantities of the various fabrics which we desire to sell, must soon, by an inevitable extension of railroads, be brought into intimate connection with this country. Her naturally not unfriendly people may be taught, by fair and profitable traffic, to forget the suspicions born of their disasters during our dark period of slaveholders' rule, and they also may propose a full and free commercial union on the basis of her adopting our tariff system in its entirety as toward all other countries, and abrogating the customs frontier between us. tem in its entirety as toward all other countries, and abrogating the customs frontier between us. If this should be asked under circumstances which would guarantee the sufficiency and integrity of her customs service, might it not be granted? And might not our vast existing area of absolute free trade be thus extended to the still wider proportions of the North American con

There is much good practical common ense in these lines, which commend themselves to the judgment of conservative men of whatever faith in matters of political economy. Under our tariff, which, with unimportant exceptions, applies equally to all countries, the United States have enjoyed a prosperity far greater than would have been possible under free trade. There is no apparent reason why we should now abandon this principle as regards Canada and Mexico. Such concessions are sought chiefly in the free-trade interest, by those who hope to weaken the cause of protection. This was what was sought in the case of the Hawaiian reciprocity, which has been without benefit, and which should warn us not to repeat the experiment without better reason than appears in the case of Canada and Mexico Just now we are witnessing a desperate effort to create a popular interest in a plan of reciprocity with France. A gentleman is now canvassing this country, making speeches before Boards of Trade and Commercial Exchanges in the interest of certain French manufacturers of wines, chocolate and fancy goods, who would like free trade with this country, but who are not in position to offer anything but promises and assurances in return. To grant special privileges to any one country under a treaty of reciprocity would be a mistake. We hope that Congress will pay no attention to any schemes of this kind which may be brought before it.

The term "delusive reciprocity," which ccurs in the lines we have quoted, is good and full of meaning. Commercial reciprocity is usually a delusion. One country buys what it wants of the products or manufactures of another country, without much reference to whether the producing country takes money or products in exchange. Under reciprocity with Canada, or Mexico, or France, we should probably lose some advantages, and gain none which could not be more easily and cheaply secured by reducing or abolishing the duty on particular articles-for example, Canadian lumber, French wines or Mexican fine woods-if desirable. Whether such a thing as a commercial union with Canada and Mexico can ever be effected, is a question which could not at this time be intelligently discussed -much less answered. No such union is possible at present.

Traveling Salesmen in the Stove Business.

At a meeting of stove manufacturers would be necessary, therefore, to strictly held on the 11th ult. at Cleveland, with the action in the trade with regard to an advance in prices—which is not only desirable. but necessary—the following resolution was adopted, among others:

Resolved, That the subject somewhat discusindependent and more self-respecting than the could be if dependent upon charity in case of need.

No "Delusive Reciprocity."

No be lusive Reciprocity." in the city of Boston the coming June, and that W. W. Baldwin, of Cleveland, be requested to prepare a paper upon the subject.

As the resolution is somewhat vague, and does not give a very clear idea of the nature of the discussion at Cleveland to which it alludes, we might, perhaps, pass it without comment did we not know, from having listened for a number of years to the semiannual deliberations of the National Asso-ciation, that a good many manufacturers are anxious to see the system of selling must be made for many things which are are anxious to see the system of selling goods by travelers abolished. Some have even gone so far as to dispense with the services of these gentlemen, and have announced the fact with an eagerness of procla-A commercial union with the Continent, of thick, geographically, ahe is a part, and with mation which seems to imply that they er man to send out at all, the net result of hope thereby to favorably impress the deal-his work will pay his employers many fold,

terest to all classes of our readers, to venture

some general opinions concerning it.

In the first place, we believe that all talk about abolishing traveling salesmen is what unregenerate people call "bosh and gammon." It simply will not be done. A few houses may be so situated that they can do it, or pretend to do it, but the majority will not, and those who lead this "reform" movement will have the satisfaction of surrendering to more enterprising competitors the trade they cease to seek in the hope that it will seek them. That houses with a national trade will or can dispense with travelors is an idea which, to our mind, savors very much of absurdity. It may seem a very easy thing to do, but we ven ture to predict that if any good men now on the road are discharged, they will find no difficulty in effecting better connections at once, and that an opportunity will be given them to return to their old employers at an increased salary at the end of the first season. The good traveler not only makes trade, but he controls it to a great extent after he has made it. If his employers suppose that they can hold his trade through correspondence, in competition with his personal efforts to give some one else the benefit of it, they are very likely to find themelves much mistaken.

It is not to be supposed that any house mploys travelers simply as a luxury. They have become an indispensable necessity. It is not exceeding the bounds of truth to say that the commercial traveler is the life of trade. To dispense with him we must return to the business methods which were successful in the days when we purchased merchandize one box to the invoice and received our mails weekly by stage coach. In our experience with other trades more or less intimately related to the stove business, we have found, as the rule, that when a house dispenses with its travelers it is because it has no further use for them, and that the trade it ceases to seek it would not get if it did seek it. This is not invariably true. Sometimes really enterprising houses dismiss their travelers merely through a mistaken policy of business management, or a delusive notion that some other method of finding and holding customers is cheaper and better; but such houses generally return to the established method and again send out their salesmen to seek trade. Great Britain and on the Continent, where a longer business experience has given greater stability to established customs, the traveling salesman is the agent by whom nearly all wholesale transactions are effected. In this country of magnificent distances and widely separated markets, he is even more a necessity, and we are confident that the stove manufacturers will not find any practicable substitute for the commercial traveler so long as they have anything to sell outside of their strictly local market.

To the dealer the traveling salesman is as much of a necessity as he is to the manufacturer. The dealer may sometimes complain that he is overrun with men who seek his custom, and that he is often persuaded to buy what he don't want by the urgent solicitations or specious misrepresentations of the "drummers" who lie in wait for him. But were these same troublesome drummers" to shun his store; were they to leave him in ignorance of new styles and changes in prices, while giving his competitors the advantage of them, he would quickly find that he must give up business or do it at a greatly increased cost of money and trouble, to say nothing of the inevitable loss of time involved in replenishing his stock by frequent visits to, the nearest great centers of production and distribution. For every complaint now made by dealers that "drummers" annoy and bother them, hundred would be heard were the "drum mers" withdrawn from the road, or in structed to visit only those who met them with demonstrative welcome.

The dissatisfaction which manufacturers feel with the traveling sa man system is. generally speaking, largely due to causes of their own making. In their efforts to economize in salaries and traveling expenses, they have encouraged a class of men to enter the business who have no proper qualifications for the road, and made good men feel that they were out of place in a business in which such persons could make a living. The traveler should be a man of experience, and with especial qualifications for the position, which is, or should be, one of large discretion and unquestioned responsibility. He must be a merchant in the largest and best sense. Such men are not cheap men. They can usually command good positions, and cannot be induced to sacrifice the comforts of a quiet domestic life, even for a few years, unless it is made to their pecuniary

interest to do so. A traveler cannot occupy a middle ground. seldom taken into account by employers who do not themselves go on the road. He cannot always make large returns, nor always earn his expenses; but if he is a proppropriety of stopping their business corredence to save postage stamps.

Some months ago we pointed out the very serious effect the demonetization of silver and its consequent depreciation was having on English trade. A large part of the failures in that country are of houses connected with the India or South American trade, and the heavy decline in the English value of the coin they have taken in payment has exhausted surplus and capital. Evidence of this fact is found in the statement of the Oriental Bank of London, that its reserve of Oriental Bank of London, that its reserve of \$1,650,000 is exhausted and no more dividends need be expected. This is a bank with a capital of \$7,500,000, whose interests are in the trade with China, India and Japan, the great silver countries. Its business for five years has been a constantly losing battle with the steady decline of silver. The appeal of the Liverpool Chamber of Commerce for "a fixed ratio between gold and silver, with unlimited freedom of mintage and recognition of the two metals as full legal tender," reads rather strangely in the light of the sarcasms and dishonest motives that were attributed to this country only a year ago. No epithet indicating an utter absence of commercial honor was too vile to apply to us; but now the Chamber of Commerce of the great port of the British Empire, appeals unanimously to the Ministry to reverse the policy that was so vaunted in 1878, and to adopt that which America ad-vocated at the Monetary Congress.

New Publications.

MERICAN ALMANAC AND TREASURY OF FACTS FOR 1879. Edited by Ainsworth B. Spofford, Librar-ian of Congress. Published by the American

Mr. Spofford, who seems to have exceptional facilities for collecting and arranging a vast mass of statistics, and who certainly utilizes his resources well, has issued his second almanac. From frequent use of the first, for 1878, we are in a position to state that it is an admirable book of reference, that it is an admirable book of reference, the data being compiled from the publica-tions of accepted authorities. An enumera-tion of the numerous statistical tables given would lead us beyond our space; suffice is to say that they embrace finance, industry, politics and general statistics. Mr. Spofford has added a number of short and valuable articles, original, compiled or translated, in which a variety of important subjects are ably dealt with. We would, however, suggest that it is rather unfair to less favored iron manufacturing districts to give wide publicity to the exceptional facilities of Scotland by such statements as we find on page 133: "The actual cost of Scotch pig page 133: "The actual cost of Scotch at the pit's mouth has been stated to be low as £1. 19/, or about \$9.50 per ton."

American ironmasters have worked hard to crowd the Scotch out of our home markets, but we fear that when they learn how hopeless the task is to compete against pig iron mining, they will abandon their furnaces and take to prospecting for similar deposits in this country.

Timely and interesting articles are those

on the census; on taxation, its history and principles; on the world's stock of metals, taken from the Economiste Français; on the homestead and exemption laws, and on specie resumption in England. The vast bulk of statistics of course relates to the United States, and to these every business man will have frequent occasion to refer to. We regret that the publication of the al-manac has hitherto been unprofitable to the

"The Quality of Pittsburgh Iron."

To the Editor of The Iron Age.—The chivalrous editorial defense of "the quality of Pittsburgh iron " in last Iron Age, com-pels me to "rise to remark" that I have en one of the number of "Eastern manufacturers who have professed to believe that very little bar iron of ordinary commer-cial quality was made in Pittsburgh into which more or less old rail did not enter, and this belief was founded on three reasons First, a reliance upon the accuracy of your Pittsburgh market quotations; second, personal acquaintanceship with many of its large manufacturers, which convinced me they were too wise, and too conservative, to they were too wise, and too conservative, to continue all these years selling iron at a loss; third, the knowledge derived from figures obtained from several Western millwners, which my own experience teaches me cannot be far wrong, and which, if correct, go to prove that refined iron made on ore cannot to-day be made even in Pittsand sold at prices quoted by you,

Of course the only possible explanation of is the one which you "officially" (as our left is the one which you "officially" (as our friend Sir Joseph Porter, K. C. B., would state it) say it would be "unfair and untrue" to make, and that is the use of old rails. For one, I don't wish to be considered either "unfair or untrue," and therefore desire thus publicly to put on record my belief that our Western brethren have been sadly maligned. In the light of your statistics, I am compelled to believe that they "never" used an old rail; in point of fact, I very much doubt if there is a mill owner in the iron metropolis who knows an old rail from a new one, excepting, of course, our worthy friend, the president of the Lake Eric Rail-way, who is compelled to know the differbut I except him only in deference to his official position. Still further, 1 am con-vinced that further investigation would prove that the "go tons" old rails received there for the three months ending March 15, I will sign anything you will write. But, noticed. The writer of the article should Mr. Editor, what does become of the old have taken a little more trouble to ascertain rails? Philadelphia scorns the thought of using them; Wilmington won't take them and especially the readers of your paper. for a gift; Phœnixville clothes herself in is needless for us to point out the spec which she is connected by identity of race, would afford her large and unrestricted markets, free participation, perhaps, in our coasting trade, with other commercial advantages too numerous to specify, and at the same time give her the needful protection against that European compectation protection against that European compectation protection against that European compectation from which her rising industries bave most to fear; it would, in fact, afford to her what we already enjoy—all the practical advantages of both free trade and protection, conscious innocence when accused; Columbia and Duncannon and Reading rise in virtuous indignation at the bare thought; Allentown bows, and gently lisps "we pass;" Catasauqua replies, "not any for me, thank article more severely criticised, and you

use them all in making their "best" and "best best" irons, 'pon honor. That problem being solved, will you give me space for a few figures. I know that figures will lie sometimes, but, mine, coming from a temperance community, are not inclined to that position. In your last number you quote the lowest priced pig irons in Pittsburgh as being "cinder mixed." Now, this is hardly the most desirable of mill irons, but let us take it as the basis of our estimate of present Pittsburgh cost of bars:

Tresoure of Date .	
"Cinder mixed" mill pig	\$18.00
Fettling ore, one-fifth of a ton	° 1.50
Waste in puddling, 5 per cent	.97
waste in reneating, say a per cent on	
cost of puddle bar, value at \$28	1.40
Labor	11.50
Castings fire-brick and clay	1.50
Brasses, lumber, oils, tallow, belting, cart-	
ing, &c	1.25
Repairs	.50
Insurance, taxes and salaries	1,00
Coal, including steam coal and lighting up,	
60 bushels at 3 cents	1.80
Total	\$39.49

As before stated, I derive all these figures from Western sources, with the exception of present price of coal, which I glean from your quotations. In every instance I have taken the lowest price given. I have estimated coal used at 60 bushels, although some of my authorities give 70 bushels as the minimum; but I am inclined to think the quality used in those cases was inferior. A slight credit may be claimed for mill cinder, but where so small an amount of fettling is used this cannot be important, and is more than offset by many items that go into the cost of producing iron, but rarely into the estimate. Some of the mill owners make their own pig iron, but in view of their last balance sheet, it is possible that they may wish they did not.

If my figures are incorrect, it will be a matter of general interest to have them amended; if they are correct, then— I remain, yours respectfully,

To the Editor of The Iron Age: Under the above caption an editorial appeared in The Iron Age of March 27, which is calculated to do not only injustice to the Philadelphia mills, but injury to the whole Eastern iron industry; and, imprimis, we submit that a salaried officer of a local iron associaeditorials for a national iron journal. He is too much blinded by sectional prejudice to take a broad view of the situation. The effort now referred to seems to have been born of ignorance and design, and may do incalculate mischief. No wice man will incalculable mischief. No wise man will say that old rails will make as good bar iron as can be made from the best puddled iron; while an ingenuous man would not argue that the Pittsburgh mills used but 90 tons of old rails in three months. Everybody knows that the stocks of old rails were about ex-hausted when the three months selected

Whether Pittsburgh mills have used old rails or some other inferior stock, the correspondent of The Iron Age has written from that city that the mills furnished bar iron in quality according to the price obtained, and that fact accounts for the bad iron which has been shipped East, for sale at almost any price obtainable, to the great injury of legitimate trade. Such a policy may suit Pittsburgh, and the mills there may continue to turn out refined iron from old rails; but the Philadelphia mills brand every bar of refined iron made, and its quality is unques tioned; hence they prefer using No. No. 3 pig iron, puddled in their mills.

The Philadelphia mills cannot produce such iron for less than the present selling price, 1.9¢ @ 2¢ per lb. Can Pittsburgh manufacturers, with dearer ores and pig iron, and much higher labor, afford to make refined iron, freight it to Philadelphia and New York, and sell for 1.8¢ per lb. † Not unless the mill doing so is in the same breakers which have wrecked so many concerns in the past six years, and names a very low price in order to force the sale of bars, and probably prevent the Sheriff from making the sale. Such transactions will destroy any business.

After an unprecedented depression in the

iron trade, the gradual improvement of general business has caused a quickened de-mand for pig iron and bar iron, and a small increase in prices. Will the merchants who have bought heavily of Philadelphia and Eastern iron, and who find trade more active than for years, thank The Iron Age for this attack upon the quality and price of their goods—assuming the figure Pittsburgh house as the price for the try, thus tending to check the current of improving trade and unsettle all values

The Pittsburgh mills may have lost their supremacy by the establishment of mills further West, and their local spring trade may not have commenced, but unloading their surplus in the Eastern markets at \$5 a ton below Eastern price is a poor remedy. If they want to ship iron East, let the quality and name be stamped on every bar; then merchants and consumers can judge whether or not it is refined iron.

Shipments eastward at ruinous prices can easily be followed by an invasion of Western territory by Eastern mills. A better course would be for manufacturers of both sections to have a friendly interchange of views, by which local jealousies could be suppressed, and a great industry saved from destruction by mutual forbearance QUAKER CITY. unity of action.

PHILADELPHIA, March 31, 1870. To the Editor of The Iron Age .- DEAR SIR : there for the three months ending March 15, there for the three months ending March 15, were at once put on a flat boat and sent down the river. If this apology for hitherto uncharitable feelings is not strong enough, I will sign anything you will write. But, Mr. Editor, what does become of the old have taken a little more trouble to ascertain the thought of

We shall not be surprised to see the article more severely criticised, and you Respectfully, DALLET & Co.

AMERICAN SCREW CO.

Providence, R. I.,

MANUFACTURERS OF MORE THAN 4000 VARIETIES OF PRODUCT,

AND INCREASING THE ASSORTMENT DAILY.

Machinery employed contains important inventions recently patented, and which are designed to produce Screws at a lower cost to the consumer than has ever been attained.

All goods are distributed through the Hardware trade, to whom a liberal discount will be allowed.

INTERNATIONAL EXHIBITION.

No. 235.)

PHILADELPHIA, 1876.

The United States Centennial Commission has examined the report of the Judges, and accepted the following reasons, and decreed an award in conformity therewith.

Philadelphia, November 8, 1876.

REPORT ON AWARDS. Product: Iron, Brass and Steel Screws, Tire and Stove Bolts, Rivets.

Name and address of Exhibitor: American Screw Company, Providence, R. I. The undersigned having examined the product herein described, respectfully recommends the same to the United States Centennial Commission for Award, for the following reasons, viz Being of a quality nearly approaching perfection, showing the highest attainment in this branch of manufacture.

Approval of Group Judges.
Daniel Steinmetz, Jas. Baip.

G. L. Reed, J. D. Imboden, J. Diffenbach, Dav. McHardy

Chas. Staples,
A true copy of the record. Francis A. Walker, Chief of the Bureau of Awards.
Given by authority of the United States Centennial Commission. A. T. Goshorn, Director-General.

[L.S.] J. L. CAMPBELL, Secretary.

J. R. HAWLEY, President.







After forty years' experience we offer to the trade our Centennial Screws, patented May 30, 1876, as the best we have ever known.

The method of manufacturing is also patented, and we are changing our machinery as fast as possible, to manufacture the improved article only. To introduce them, they will be sold at the same price as the old style screw.

The new screws will be packed in manila colored boxes with the new label covering end of box, and enlarged figures showing plainly con-

To distinguish this screw we have adopted a trade-mark, which is also secured to us.

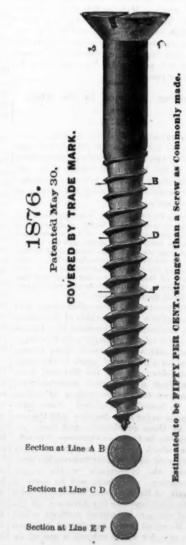
The accompanying engravings show the progress of making screw from the old blunt point to style now

Experience has shown that the wear point of screws, as formerly made, is at the heel of the three I, where all



Section at Line C I

G. L. REED. Signature of the Judge



the strains of forcing the screw into the wood naturally concentrate.

To avoid the sharp angle existing in the old style of screws has been the aim of all manufacturers, but every expedient hitherto adopted has proved as objectionable as the evil complained

It will be seen in our new screw that not only is the sharp angle avoided, but the strength very much increased, as illustrated. See sections at lines.

CLAIM.

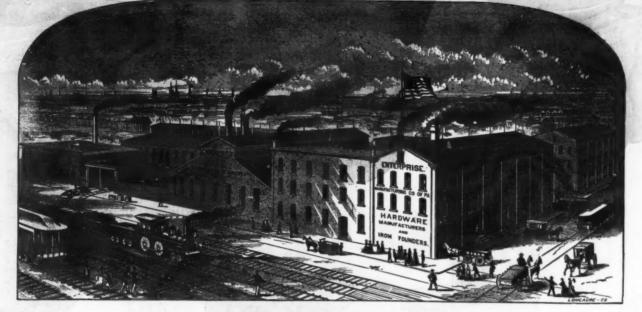
"A Pointed Wood Screw having the outer periphery of the thread upon its body cylindrical, while a portion of the body below the thread and near the neck is conical, the remainder of the body to the point being cylindrical, and yet having all the thread brought to an edge of a constant angle, without jogs in the paths between the threads, substantially as described."

ENTERPRISE MANUFACTURING COMPANY of Pa. Patented Hardware · Manufacturers and Iron Founders,

Third and Dauphin Streets,

PHILADELPHIA.







OF WORKS.



Combined Sausage Stuffer, Fruit, Lard and Jelly Press. EIGHT STYLES, From \$2 to \$9.



Double-Pointed Smoothing, Polishing and Girls' Toy Irons.



Champion Dried Beef Shaver, Potato, Fruit and Vegetable Slicer.

PRICE, 786.



PRICE, \$3.







Enterprise Self-Weighing Cheese Knife and Safe.

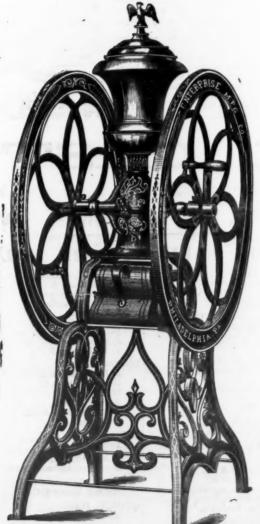
CORRECTLY LABOR SAVING.







Enterprise Bung-Hole Borer or Hollow Auger. THREE SIZES, From \$1.50 to \$3.



No. 20 Mill.



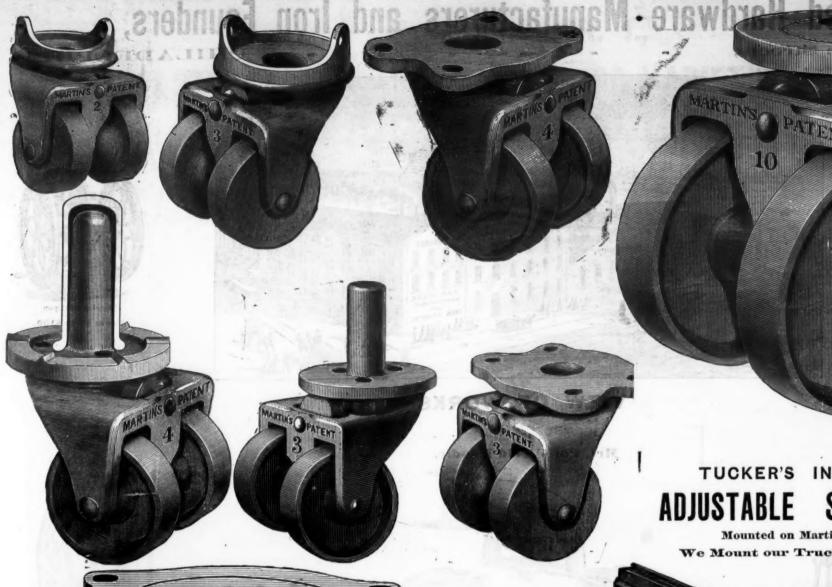
FOUR SIZES, From \$3 to \$10.



Champion Tobacco, Root and Herb Cutter. No. 1, \$2; No. 2, \$3.

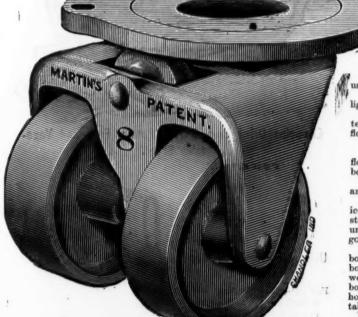
FOR SALE BY THE HARDWARE TRADE.

PHENIX SUGASTIERSING



TUCKER'S INCOMPARABLE

Mounted on Martin's Patent Caster. We Mount our Truck on Nos. 8 and 10.



Our different sizes Casters are adapted for se as designated below:
No. 2, For parlor chairs and other very

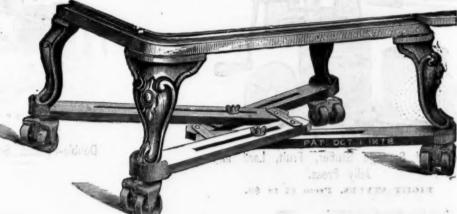
light furniture.
No. 3, For invalid and office chairs, ex-

No. 3, For invalid and office chairs, extension and other light tables, rope reels, flower stands, &c.
No. 4, For bedsteads, &c., &c.
No. 5, For heavy bedsteads, book-cases, flower-stands, refrigerators, safes, sideboards, desks, or very heavy furniture.
No. 6, For pianos, extra heavy sideboards and book-cases.
No. 8, For show-cases, light store trucks.

No. 8, For show-cases, light store trucks, ice chests, heavy refrigerators, heavy flower stands, &c. Especially useful as a truck under sample stoves or any heavy sample goods.

No. 10, For heavy ice chests, magazine boxes, store trucks, heavy show-cases, beer boxes, large refrigerators, or any very heavy weight. Especially adapted for use in beer-

bottling, fruit-canning, tobacco or ware-house establishments, where heavily-loaded tables need to be moved. No. 14, Warehouse trucks, or for carrying any immense load.





The above cut fully illustrates our Adjustable Stove Truck when in practical use; readily adjusted to any size stove, and the only Stove Truck made using Martin's Patent Caster. This Caster enables you to move a stove over the most uneven floor without any jostling, and adds 100 per cent. to the appearance of your

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AUBURN, N. Y. Dexter A. Smith.

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Established 1845. Office, foot of Houston Street, East River, NEW YORK.

The largest stock of Fire Brick of all shapes and s on nand and made to order at short notice.

Cupela Brick, for McKenzie Patent, others. Fire Mortar, Ground Drick, Clay and Superior Kaolin for Rolling Mills and found-Stone Ware and other Fire Clay and Sand, a my own mines at New Jersey and Staten nd, by the cargo or otherwise.

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FIRE BRICK **And Furnace Blocks** DRAIN PIPE & LAND TILE.

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FIRE BRICK,

For Relling Mills, Blast Furnaces. Foundries, Gas Works, Lime Klins, Tanneries, Boiler and Grate Setting, Glass Works, &c. FIRE CLAYS, FIRE SAND, AND KAOLIN FOR SALE.

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PHILADELPHIA Eighteen years' practical experie WM, J. O'BRIEN



DUC'S IMPROVED ELEVATOR BUCKET.

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Made of Best Charcoal Stamping Iron. No Corners to Catch. Light Running and Very Durable. The only Scientifically Constructed Elevator Bucket in the Market.

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THE STORE-HOUSE BUCKET.
(Partial straight front.)
In 19 in., 14 in., 16 in. and 17 in. Sizes. Send for Circular.



The MILL BUCKET

in., 16 in. and 17 in. Sizes.

Sole Manufacturer,

CONTINENTAL WORKS, Brooklyn, E. D., N. Y.

NICHOLSON FILE Co., FILES AND RASPS.

Filers' Tools & Specialties.

Manufactory and Offices at Providence, R. I.

The following space will be used in illustrating our specialties, the matter being changed weekly.

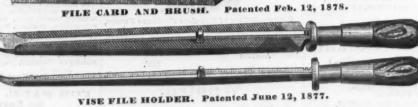


STUB FILES AND HOLDER.





Patented Feb. 12, 1878. FILE CARD AND BRUSH.



Bradley's Edge
Ring Bush Hooks,
Ax Eye Bush Hooks,
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Socket Bush Hooks, Butchers' Cleavers, Butchers' Choppers, Axes and Hatchets, Grub Hoes and Mattocks, Box Chisels and Scrapers,

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Established 1838. Bevin Bros. Mfg. Co., Easthampton, Ot.

Manufacturers of

SLEIGH BELLS House, Tea, Hand, Gong Bell &c. Bell Metal Ketties.

Mining and Mineral Items.

From the Louisville Manufacturer and Merchant we glean the following concerning the arrivals, departures and consumption of coal at Louisville during the year 1878;

DEPARTURES.

Comparing the differences of stock on hand Jan. 1, 1878, and Jan. 1, 1879, the following is a fair estimate: 9,800,000 bushels of lump coal; 1,500,000 bushels nut coal; total, 11,300,000 bushels. The consumption of Ohio River coal during the year 1878 amounted to 124 barges, containing 1,360,000 bushels. During 1878 the amount of Kentucky coal received by railroad was 5304 cars, making the consumption of Kentucky coal for the year 1878, 1,670,000 bushels. The following shows the total consumed:

Total 14,330,000 Total.....

Total coal and coke, 15,270,000 bushels. The spring freshet up the Big Kanawha, W. Va., did a large amount of damage at the different coal works along its banks, taking away a number of tipples, boats, &c., but the operators have generally got the damage repaired and their works in operation again. The Raymond City mine is on full time, employing from 180 to 200 men. At Campbell's Creek, Lowell's mine, and the three Denny mines are running, and a number of other works in this region are at work or about starting up. The small amount of coal sent down from the Monon-

amount of coal sent down from the monongahela River this spring will help things along in this region.

A Pomeroy, Ohio, correspondent, of the Pittsburgh Telegraph, writes under date of March 25: The coal works in this vicinity March 25: The coal works in this vicinity are generally doing pretty fair this month. The Pomeroy Coal Company is operating four mines, shipping by the river. The Minersville mine employs about 100 men, and running pretty steady; the Diamond mine employs 90 men; the Dabney mine 100 men; the Polcock mine about 110 men; the Williams mine, at Minersville, is now running, employing about 125 men; the Excelsior mine has been idle for some time and is just resuming, with about 30 men in. but is just resuming, with about 30 men in, but is causing a little ripple of excitement among the men in the other works, as it is reported they are loading for \$1.50 per 100 bushels, which is 50 cents per 100 less than is paid at the other works. Meetings are being held by other miners and delegates appointed to wait upon the men in this mine, to persuade them not to work under the established price of mining in this neighborhood. The Syracuse mine, four miles above here, is Syracuse mine, four miles above here, is running steady at present, with about 100 men in. There are quite a number of small mines hereabouts furnishing coal to the different salt furnaces, but do not ship any coal.

At Mineral Ridge, Ohio, the mines are not running more than half time at present, except Ohiton shaft.

A new coal shaft is being sunk on proper

A new coal shaft is being sunk on property owned by the Connellsville Gas Coal Company at Wheelersville, above Conne sville.

pany at Wheelersville, above Conne sville. The company own 3100 acres of co I land, and if the shaft now sinking proves a success at 175 or 200 feet—the point de ided by local and foreign engineers—betw en 300 and 400 ovens will be put up dur ag next season.—Mt. Pleasant Dawn.

Owing to the depressed condition of trade throughout the country, the Ch sapeake and Ohio Canal has suffered with other transportation companies, and its t ade has fallen off considerably since 1873. Yet it presents as good a showing as othe institutions. In 1873 the Baltimore Railroad shipped 1,509,570 tons of coal, and he canal 641,220 tons; in 1877 the railroa carried 755,278 and the canal 473,646 tons. It will thus be seen that the carrying trad of the canal, as compared with the railroad, shows a better condition than the latter.

The Hutchison Brothers are putting up a

The Hutchison Brothers are putting up a lot of new coke ovens at the Duncan Mines, near Mt. Pleasant, Pa., and are preparing to make coke the coming summer. By next fall they expect to have 100 ovens in opera

Labor and Wages.—The miners along the Allegheny Valley and Pennsylvania railroads, near Pittsburgh, have been receiving 3 cents all along, while those of the Panhandle have been paid but 2½ cents. To this the latter have been for some time demurring, and the success of the river miners' strike induced them to take a firm stand. A convention was held recently at Walker's Mills, and after the subject had been discussed, it was decided that no more work would be done in the district for less than 3 cents.——It is expected that the Miners' Union will pay the costs of prosecution in the riot case, \$2300, tried in Washington County, Pa. Upon this being done the prisoners will be released.

Glass Items.—The company having the Fayette City Glass Works, which have been standing idle for nearly a year, made an effort to get a set of hands who would agree to leave a retainer in the hands of the company to insure them to per cent. profit on all moneys invested. The effort proved a failure.—Stewart, Estep & Co., Pitts-burgh, will start their small 6-pot furnace at once. This will make 15 out of the 18 window houses ruhning, and will employ nearly all the surplus blowers, gatherers and cutters in and around Pittsburgh

The entrails of sheep are now used for making belting for machinery at a California establishment. A 4-inch rope of this material will bear a strain of 7 tons. It is aid to be much more durable than hemp.

Another Invitation from the Dominion to American Manufacturers.

We take the following from the Halifax

We take the following from the Halifax Maritime Journal:

To Messrs. Henry Diston & Sons, saws, Philadelphia; Clark, Reeves & Co., Phemixville Bridge Works, Philadelphia; Waterbury Brass Co., Waterbury, Conn.; Seth Thomas Clock, Co., Bridgeport, Conn.; Washburn & Moen Mfg. Co., iron and steel wire, Worcester, Mass.; John A. Roebling's Sons & Co., wire rope, Trenton, N. J.; Fairbanks & Co., scales, St. Johnsbury, Vt.; Howe Scale Co., Rutland, Vt.; Brown & Sharpe Mfg. Co., machinery and tools, Providence, R. I.; Russell & Erwin Mfg. Co., screws and builders' hardware, New Britain, Conn.; B. Rowland & Ce., shovels, Philadelphia; Nicholson File Co., flee and rasps, Providence, R. I.; E. Remington & Sons, fire arms and machinery, Hion, N. Y.; Burnham, Parry, Williams & Co., Baldwin Locomotive Works, Philadelphia; Pratt & Whitney Co., templet-made machinery, Hartford, motive Works, Philadelphia; Pratt & Whit-ney Co., templet-made machinery, Hartford, Conn.; The Meriden Britannia Co., West Meriden, Conn.; Stanley Rule and Level Co., carpenters' tools, New Britain, Conn.; George Duncan & Sons, flint glass ware, Pittsburgh, Pa.; and a number of other eminent manufacturing firms in the United

Gentlemen: Some months ago, when the elections had decided the direction of the siscal policy of this Dominion, we addressed you on the subject of the market that our country would in future afford to the employment here of your inventive skill, your organization of machinery and your capital.

We pointed out to you that the preference for your wares had tended steadily toward the exclusion of British manufactures of the same kind, even although in many cases your prices were higher; we gave as a reason for this preference the greater purposefulness of these goods made by you, and we reminded you that under the expected tariff giving protection to home industry we would naturally set to work first to make these goods for our own market, and we invited you to avail yourselves of the special advantages which you possessed in your perfected tools, of which you could easily produce duplicates for branch factories to be opened by you here: we showed you that by so doing you would be powerful against any competition by manufacturers who had to devise and construct, from their own to devise and construct, from their own designs and with ordinary tools and means of production, the machinery which you would produce as younger children of the same parent mechanism which produced the tools employed by you at home.

As business men you will clearly see that our advice is by no means disinterested, and that our purpose mainly is to secure the establishment here of industries warranted to be free from the mishaps of imperfect or crudely constructed tools.

crudely constructed tools.

Although this province possesses the mineral wealth, the facilities of water supply mineral wealth, the facilities of water supply and the ocean access to raw material, yet in manufacturing enterprise it has always been far behind the inland province of Ontario; that province to-day, with the English speaking half of the province of Quebec, oc-cupies for the most part the home manufac-turers' market of the Dominion.

But we in Nova Scotia have thoroughly awakened to the need for entering on the field, and at the same time we wish to secure neid, and at the same time we wish to secure success to our efforts by guarding against entering on any line of manufacture in which we would have to contend with perfectly developed factories in our sister provinces; to meet these now would be to waste energies which would be to waste energies which would in other lines assure the reward of an immediate control of the whole market of the Dominion.

It is, therefore, advisable that the indus-tries stated here should have some or all of

the following conditions:

1. With no rivals yet in the Dominion: 2. If with rivals, yet in the Dominion.
2. If with rivals, yet secure of success by their superiority of mechanical finish, which would compel the manufacturers of other provinces to yield up their market.
3. Finding here a supply of raw material so easy and cheap that all other provinces would accept this as the most profitable site

of manufacture.

or manufacture.

In selecting you as representative manufacturers, we used the required care to avoid the mistake of investing any trade which would meet a valid opposition from any concern having a footing in the Dominion.

any concern having a footing in the Dominion.

Disston's saws, made in Nova Scotia, would find undoubted preference in every lumber mill, factory and shop over any of the saw maker's products of Ontario or Quebec. Fairbank's or Howe's scales, favorably known even as foreign products in the Dominion; as a Canadian production either of them would weigh all the fish of our coasts and all the grain of our wheat fields.

and all the grain of our wheat fields.

Nicholson's files would equally sweep the
market of its best buyers.

The Baldwin Locomotive Works, opened

The Baldwin Locomotive works, opened in Nova Scotia, would easily claim and receive one-fourth a higher price than any locomotive concern in Canada now existing.

The Russell & Erwin Co. would command

The Russell & Erwin Co. would command the trade throughout the Dominion for their products of builders' hardware.

The glass makers of Pittsburgh, the clock factories of Connecticut, the Roeblings, the Washburn & Moen, the Remingtons, the Brown & Sharpes, the Pratt & Whitneys, and the other great concerns whom we invite, will find in the Dominion a large field of consumers, with no rival manufacturer as

vite, will find in the Dominion a large field of consumers, with no rival manufacturer as yet occupying it.

This province has wonderful advantages for the establishment of branch concerns from any of your great home shops; you can float heavy goods, without transshipment, in large vessels from our perts to the western extremity of Lake Superior; our national resilves a chean access to all national railroad gives a cheap access to all the markets of Canada, and as a local home

the markets of Canada, and as a local home market we can give you the command of the maritime provinces, containing one-fourth of our whole population.

The pig iron, the har iron, the railway iron, the railway bridges, which will after this day be used in Canada, either for government or for private enterprises, all must of necessity issue from this province, the ironmaster's blast furnace and rolling mills of the Dominion.

well as our own, we hope to erect an array of manufactures here that will make Nova Scotia supreme in the industries of the coun-

try.
Again we invite you to compare the trade in your goods to this Dominion, to weigh the favoring conditions that the new tariff gives to home industry, and to visit this province, where we will show you a territory offering every advantage for the development of your branch establishments into profitable activity.

Proposed Increase of the Newfoundland Tariff.

Halifax, N. S., March 28.—The Receiver-General made a budget speech in the Newfoundland House of Assembly on the 10th inst., and it was discussed in that body until the 22d. He proposed that, except in a few particulars, the present specific duties be continued, and that there be a general addition of 15 per cent. on all duties collected. The specific changes proposed are the abolition of the drawback on flour baked into hiscuits, and a corresponding increase of bion of the drawback on flour baked into biscuits, and a corresponding increase of duty on biscuits to 16 cents per 100 pounds; kerosene oil to be changed from 13 per cent. to 4 cents per gallon; tobacco, manufactured, to be raised from 7 to 10½ cents; and leather, manufactured, to be reduced from 13 to 11 per cent. in favor of local factories and manufacturers. These changes are applied to the imers. These changes are applied to the importations for the remainder of the year, and are estimated to produce an increase of about \$90,000 upon the year's revenue. The total revenue and expenditure for the year are each estimated at \$912,000.

A Nail Works for Canada.—The Detroit Evening News says: It is understood from reliable authority that steps have been taken reliable authority that steps have been taken in Detroit, by a prominent business man and capitalist, to form a joint stock company for the purpose of starting a nail manufactory on the Canadian side, probably at Walkerville, Mr. Walker offering every inducement to the company to locate there; and, as Walkerville has both rail and water companying the with all roints, no more and, as waterville has both rail and water communication with all points, no more desirable location could well be selected. The present high protective duty of 40 per cent. gives ample opportunity for margins. For five years past the Province of Ontario—in fact the whole Dominion—has been supplied with nails by United States manufacturers, but the duty above referred to will shut out American production and throw the trade into the hands of the home manu-facturers, which fact Detroit capitalists are quick to observe and take advantage of. The works will, no doubt, soon be in operation, and are expected to give employment to 75 or 100 hands.

Special Noti es.

FORGED NUT MACHINE WANTED

For smallest sizes, latest improved, new or second-hand, in good order, with necessary dies &c. State price and terms,

BROWN & CO.,

Paris, Ontario, Canada, Box 107. SPECIAL NOTICE.

Second-Hand Steam Hammers and Forge Tools One 3000 lb. Ferris & Miles Steam Hammer, One 3000 lb. Merrick Steam Hammer, One 1500 lb. Steam Helve Hammer for Axles. One pair Heavy Shears for Scrap, One Axle Centering Machine, One 48-inch Fan Blower.

E. P. BULLARD, 14 Dey Street, New York. A Rare Opportunity in the Hardware Business. Manted, a business man experienced in the general Hardware trade, with some capital (or suitable indorsements), to join a capitalist in purchasing a business already established in one of the most flourishing business centers on the Hudson River. Only persons of unquestioned character and business standing meaning business need answer.

Direct or Apply to
Office of The fron Age, 83 Reade St., N. Y.

WANTED.—A first-class Bookkeeper is open to an engagement; has had full charge 13 years of large Jobbing Hardware House. Firm going out of business. Thoroughly reliable and competent. References as to capacity and integrity Ar. No objection to leave the city,

Office of The Iron Age, 83 Reade St., New York.

Office of The Iron Age, 8; Reade St., New York.

To MANUFACTURERS AND COMPETENT MECHANICS.—An enterprising, competent mechanic or manufacturer, with comparatively small
capital, and with an honest reputation, will find in
Canton, Ohlo, (a well-known, important manufacturing point, having a population of about 20,00, situate
100 miles west of Pittsburgh, on Pittsburgh, Ft. Wayne
and Chicago R. R.) a rare chance in "Novelty Works,"
for stepping into an active, paying, prosperous business. Within four months two more additional raliroads, now nearly completed, will run into Canton.
For further information concerning the works, busiror rurther information concerning the works, by ness and chances, please address, LOCK BOX Canton, Ohio.

Merchant Mill Manager.

W ANTED, by a man of 16 years' experience as manager of a Universal Plate and Merchant Mill, a situation as above. Reference as to reliability and competency. Apply to Elmira Iron and Steel Rolling Mill Company, Elmira, N. Y., where he has been employed as manager for the last welve years. No preference as to locality. Address STEPHEN CARTWRIGHT, 716 Hatch Street, Elmira, N. Y.

Leigh's Tables of Mercantile Discounts

(5 % to 82% % and all the combinations.) Arranged in three parts:

Arranged in three parts:

1. Comparative Discounts.

11. Comparative Net Prices.

111. Computing Tables.

Reliable, Comprehensive, Fractical.

Experiments of Every business man buying or selling by the Every Business or Every the Every Every Consenient for either Pocker or Desk use.

Mailed postpaid to any address for ONE DOLLAR.

Address EDWARD B. LEIGH.

St. Louis Elevator, St. Louis, Mo.
Or either of the Publishers, viz:
IVISON, BLAKEMAN, TAYLOR & CO., New York.
R. & T. A. ENNIS, St. Louis.

the maritime provinces, containing one-fourth of our whole population.

The pig iron, the bar iron, the railway iron, the railway bridges, which will after this day be used in Canada, either for government or for private enterprises, all must of necessity issue from this province, the ironmaster's blast furnace and rolling mills of the Dominion.

With your help and for your profit, as

Special Notices

SECOND-HAND TOOLS

one Putnam Gear Cutter.

one N. Y. S. Engine Co. Milling Machine, very heavy.

two Wood & Light Milling Machines.

two Brainard Milling Machines.

one Brown & Sharp Universal Miller.

three Lincoln Pattern Milling Machines.

one Smith & Garvin No. 3 Miller, new.

one Pond Index Milling Machine.

Three Smith & Garvin No. 2 Milling Machines.

one Pratt & Whitney No. 2 Milling Machine (Lincoln).

wo "Sorew Machine.

one cach Pratt & Whitney 2, 3, 4 Spindle Drills.

our Sensitive Drills, drills to 3.16 in. hole.

one 20 in. Upright Drill.

wo 2-Spindle Profile Machines.

one Ames Jugging Machine.

one Ames Jugging Machine.

one Engine Lathe.

"24 in. x 24 ft., nearly new Pond.

Two 2-Spindle Profile Machines.
One Ames Jigging Machines.
One Engine Lathe.
One Bright Lathe.
One " 26 in. x 2 ft., new.
One " 15 in. x 3 ft., new.
Two " 15 in. x 3 ft., sew Star Tool Co.
One " 15 in. x 3 ft., sew Star Tool Co.
One " 15 in. x 4 ft., good order. Fitchburg.
One " 15 in. x 4 ft., good order.
One " 15 in. x 5 ft. Gould.
One " 17 in. x 5 ft.
One " 18 in. x 5 ft. Gould.
One " 19 in. x 7 ft.
One " 20 in. x 7 ft.
One " 20 in. x 7 ft.
One " 20 in. x 7 ft., nearly new. Whiteomb.
One " 21 in. x 5 ft., good order. N f. S. E. Co.
One Crank Planer, 2 in. stroke, cheap.
Two Shaping Machines, 5 in. stroke, cheap.
Two Shaping Machines, 5 in. stroke, cheap.
One Sellers' Boit Cutter. Outs to 14 in.
One No. 2 Schlenker Boit Cutter, new. % to 14 in.
One No. 5 Stiles Press.
28 in. x 60 in., Corliss Hor. Engine.
28 in. x 60 in., Corliss Hor. Engine.
28 in. x 20 in., Corliss Hor. Engine.
28 in. x 20 in., Corliss Hor. Engine.
29 in. x 4 in., Double Valve Hor. Engine.
18 in. x 24 in., Double Valve Hor. Engine.
19 in. x 24 in., Double Valve Hor. Engine.
19 in. x 24 in., Arrive Corliss Valve Engine. Whitehill & to x 24 if Harris Corliss Valve Engine. Whitehill & to x 24 if Harris Corliss Valve Engine.
One 10 in. Ames Hor. Engine.
One 10 in. Ye Inshkill Landing Engine.
One 10 in. Ames Hor. Engine.
One 4 in. Whitehill & Hor. E

E. P. BULLARD,

14 Dev Street, New York.

FOR SALE. The valuable property known as

The Boonton Iron Works

at Boonton, Morris County, N. J.,

on the line of the Delaware, Lackawanna and Wes ern R. R. and the Morris Canal, giving ample acilities for transportation east or THIS PROPERTY CONSISTS OF

Two Blast Furnaces, steam and water power, with all modern appliances. Capacity, 25,o tons of metal per annum. Puddling Mill, containing 12 double puddling

and two scrap furnaces. Capacity, 400 tons bars Plate Mill, with five heating furnaces and two

Nail Factories, containing 150 machines. Store House, with storage capacity for 50,00

Keg Factory, with machinery to produc 00,000 kegs per annum. Machine Shop, Carpenter and Plumbers

Machine Shop, Carpenter and Flumbers'
Shops, Foundry, &c.
All necessary machinery and appurtenances,
driven by ample and unfailing water-power, and
with exceptional advantages for coal, ores, and

transportation of production. All the above in ex cellent order, and ready for work. For sale on favorable terms.

Apply to CROCKER BROS. 32 Cliff Street, New York.

Special Notice.

The undersigned offer their services as Agents to takers of American Cabinet Hardware. They keep a full line of UPHOLSTERERS' AND CABINET MAKERS' MATERIALS. LOUIS WINDMULLER & ROELKER, 20 Reads St., New York.

Address in Frankfort-on-Main, Germany, ERWIN ROELKER.

R. W. Cameron & Co.'s Pioneer Line AUSTRALIA, NEW ZEALAND AND THE EAST.

ESTABLISHED 1852.

Loading Berth, Pier 9 East River. Freight forwarded to all ports in New Zealand. Also to Melbourne, Sydney, Adelaide and Brisbane in Australia. Cash advances made on approved consignments. For freight or passage apply to R. W. CAMERON & CO., 93 South William St., N.Y.

TO MANUFACTURERS AND CAPITALISTS

FLOWER PINS.

A new article of light wire, recently patented Patent offered for sale. Correspondence solicited J. H. PLUMMER.

1976 Pacific Street, Brooklyn, N. Y.

Wanted,

Representatives of first-class Hardware Houses, to sell on Commission a line of goods sold to same trade. One man for Eastern, one for Middle and one for Southern States. Address

Office of The Iron Age, 83 Reade St., New York,

Wanted,

One Blake Ore Crusher, in good order. Ad dress, stating size, &c.,

MIDLAND BLAST FURNACE CO.,

706 Pine Street, Saint Louis, Mo.

JENNINGS'S DISCOUNT BOOKS.

(2 % to 85 % and all the Combinations.)

Counting House Edition (former price, \$3), size, 92111 inches, Cloth Bound, large type, \$3.

Pocket Edition (just issued), size about 4x6 inches, Cloth Bound, small type, \$1.

Contents of both Editions are the same. Pocket Edition is very convenient for many purposes, but like PATENT MEDICINES, the "Largest Size 1s the Cheavest."

Bent postpaid to any address on receipt of price, Currency may be sent by mail at Fublisher's risk, Address.

S. H. JENNINGS, Doop River, Conn.

Special Motices.

FOR SALE.

April List.

The Tools in the following list are all of Wood, Light & Co.'s make, have been used, but are all in good order and will be sold very

Five Engine Lathes, 15 in, swing 6 ft. bed. Six Engine Lathes, 20 in. swing 7½ ft. bed. Five Engine Lathes, 20 in. swing, 2 ft. bed. One Engine Lathe, 21 in. swing, 6 ft. bed. One Engine Lathe, 21 in. swing 16 ft. bed. One Engine Lathe, 24 in. swing 12 ft. bed. One Engine Lathe, 24 in. swing 12 ft. bed. One Engine Lathe, 26 in. swing 12 ft. bed. Two Upright Drills, 27 in. swing, not geared. One Upright Drill, 22 in. swing, not geared. One Upright Drill, 32 in. swing, back geared a elf feed.

One Oprigne Line, 3 in. x 30 in. x 2 ft.
Two Planers, 32 in. x 30 in. x 2 ft.
One Planer, 32 in. x 30 in. x 10 ft.
One Planer, 42 in. x 36 in. x 10 ft.
One Planer, 42 in. x 36 in. x 15 ft.
One Planer, 42 in. x 36 in. x 14 ft.
One Shaping Machine, 12 in. stool
Four Bolt Cutters, various sizes.
One Hormontal Boring Lathe.

The following are all new tools to be sold very low, and are all Wood, Light & Co.'s

Four Engine Lathes, 16 in. awing, 6 ft. bed.
Two Engine Lathes, 16 in. swing, 8 ft. bed.
One Engine Lathe, 26 in. swing, 8 ft. bed.
Two Planers, 24 in. x 24 in. x 6 ft.
One Planers, 24 in. x 24 in. x 6 ft.
One Shaping Machines, 11 in. stroke.
One Shaping Machines, 11 in. stroke.
Two No. 1 Boit Cutters.
Seven No. 2 Boit Cutters,
Seven No. 2 Boit Cutters, with centers.
Five No. 2 Boit Cutters, with center.
Also the following miscallaneous Tool

Also the following miscellaneous Tools:

Also the following miscellaneous Tools:
One Portable Engine, 6 in. cylinder.
One Hand Milling Machine.
One "Pond" Index Milling Machine.
Three Chase Patent Pipe Outling Machines.
Two Engine Lathes, 13 in. swing, 6 ft. bed. Two
Engine Lathes, 22 in. swing, 8 ft. bed. One Engine Lathes, 22 in. swing, 8 ft. bed. One Engine Lathes, 25 in. swing, 6 ft. bed. Three Engine
Lathes, 20 in. swing, 6 ft. bed. Three Engine
Lathes, 20 in. swing, 6 ft. bed. Three Lathes, 24 in. swing, 4% ft. bed. Three 4-spindle Drills.
One 3 in. Shaper. One Gear Cutter. One new
"Hardaway" Bolt Heading Machine, to head up
to ½ in. bolts. One new "Hardaway" Bolt Heading Machine to head up to 1½ in. bolts. A lot of
Saw Tables and Wood Working Machinery.
Please specify which of the above tools you want
and we will forward all particulars.
The above tools will be sold very low, and can be
seen at

The Geo. Place Machinery Agency, 121 Chambers and 103 Reade Sts.,

NEW YORK.

TO LABGE CONSUMERS

MALLEABLE IRON CASTINGS We can offer special inducements in the way overy superior quality guaranteed, and at fair prices. Being ourselves large consumers and requiring the most perfect castings, other work is ensured the same attention.

MALLORY, WHEELER & CO., New Haven, Conn.

PANAMA "STAR AND HERALD AND

LA ESTRELLA DE PANAMA. PUBLISHED WEEKLY AT PANAMA.

The principal commercial journals and res ADVERTISING MEDIUMS in Spanish America. These papers have been regularly published since 1849, and have subscribers in about 275 towns and cities in South and Central America, Mexico and the West Indies.

American manufacturers desirous of export trade can find no better medium through which to reach the BUSINESS COMMUNITIES of those countries, as no journals, either from England or the United States, have so extensive circulation on the Pacific Coast.

on the racific Coast.

Monthly Supplements to La Estrella de Panama are published, and are intended to give advertisers an opportunity of describing, by illustrations and in detail, their goods, with price lists, &c., and to serve in this respect as a catalogue, at a mere minimum of expense to them, and with the absolute certainty of distribution to all the subscribers of both journals.

Rates for advertising and other information can be had on application to STROUT & ANDREAS

3500 Feet Cast-Iron Pipe, 20-inch diameter, 9 feet lengths, all in good order. FOR SALE BY

DANIEL W. RICHARDS & CO., Scrap Iron Dealers,

92 Mangin St., New York.

To Steel Manufacturers.

An energetic young man with scientific training, who has had experience in the manufacture of Bessemer and Crucible Steel, in preference to remaining unemployed would be willing to take a subordinate position, with the prospect of being employed as blower in Bessemer or as melter in Siemens-Martin steel works. Highest recommendation as to integrity, character and shifty furnished. A correspondence, which shall be strictly confidential, respectfully solicited.

Address

A. I. F.,

33 West 35th St., New York.

FOR SALE, VERY LOW,

On Easy Terms.

One of the most extensive Machine Shops in this State, Foundry Buildings, Machinery, Steam Engine, &c., having four fronts, 268 feet by 135 feet, 250 feet by 105 feet. The above buildings are built in the most substantial manner, and are all supplied with slate roofs. The Foundry is supplied with two large cranes, 16 tons each, 2 cupolas, 2 ovens and brass shop. There is a narrow-gauge rallroad connecting foundry and machine shops, with scales and 20-ton derrick at railroad siding. This is one of the best equipped machine shops in the State. For full particulars apply to HENRY S. ZIEGLER, 609 St. John st., Philadelphia.

Bissell & Welles.

Wholesale Hardware Auctioneers,

83 Chambers and 65 Reads Sts., N. Y. Sales held weekly for the trade. Consignments solicited. We refer to the leading Manufacturers and importers.

Special Notices.

Second-Hand&New Tools The Sherman Process Co.

9 Pemberton Square, Boston, Mass., Issue Licenses to use the Process for the

Manufacture of Iron and Steel In the Bessemer Converter, Crucible, Siemens-Martin, Puddling, Blast and Cupola Furnaces.

The use of this Process improves the quality of the product, saves fuel and labor, and does not require any change in furnace or manner of working.

See page 17 of The Iron Age of Oct. 25th, 1377.

THE BUFFALO IRON AND NAIL COMPANY

Having leased its works to the Rhode Island Horse Shoe Company, NOW OFFER FOR SALE

NAIL, SPIKE, NUT

OTHER MACHINERY

SPECIALLY REDUCED RATES Apply for Catalogue to P. P. PRATT, Buffalo, N. Y.

AUSTRALIA AND NEW ZEALAND.

Wm. S. Fell & Co.,

Importers and Auctioneers,
No. 275 George St., Sydney, Australia,
Request correspondence with American manufacturers desirous of being represented in the Augtralian Colonies or New Zealand.
Consignments solicited and prompt attention
promised, and 60 day drafts against same for 50
per cent., through Bank of British North America,
New York City, will be honored.
All the principal points in the Colonies are visited
regularly by our travelers.

RESIDENT BUYER.

The undersigned, having had 14 years' experience in the Hardware trade—10 years in the wholesale and 4 years in retail trade—would act as resident buyer in New York for any out of town house or houses entrusting their orders to him. Is conversant with the Paint, Oil and Glass trade, and having had experience as a buyer for New York wholesale houses, considers himself competent to buy for out of town parties. Will attend to purchasing, forwarding and insurance of merchandise. All goods bought at headquarters, and special attention paid to orders for odd articles. Office and desk room at the service of correspondents when in the city. Correspondence invited as to facilities, commission or salary. The advantages in obtaining five or six correspondents are obvious, both as to reduced expenses and purchase of goods in large quantities. Unexceptionable references as to character and ability. Address BUXER,

DISCOUNT SCREW LIST.

Discounts from 25 % to 60&10 %.

By a new arrangement I have put my list in a form that takes up less than one quarter of the room occupied by the old card. I have added a Brass Screw List (without discounts), mailed without rolling on receipt of 75 cents.

Hardware Price Books, large size, \$10 and \$12; pocket size, \$5.

BUELL LAMBERSON,
97 Chambers Street, - NEW YORK.

CALIFORNIAN AGENCY.

A San Francisco firm of File and Tool makers having an agent constantly traveling among the consumers in the State and West Coast, is desirous of representing some first-class Eastern Houses in the manufacturing hardware trade. Address AGENCY, 248 Beale St.,

THE IRON LINE.

For the transportation of IRON, IRON ORE, COAL, &c., Between Lake Champlain, New York, Philadel-phia, Pa., Wilmington, Del., and intermediate places. For Freight apply to

F. W. STARK, 33 Coenties Slip, New York. JOSEPH PHILBRICK, 2201 Beach st. Phila., Pa.

To Practical Iron Men.

I offer for sale a controlling, or less, interest in the HAY METALLURGIC CO., not from want of faith in the virtue of the process for improving Iron and Steel, as evidenced in the Steel used in the Missouri River Bridge, but because those controlling the patents have not the necessary knowledge and skill to use them. Address, Dr. G. R. HENRY, Burlington, Iowa.

Charcoal Iron.

Address, E. P. CUTLER & CO., 10 Oliver St., Boston. PARTNER WANTED.

WANTED—A party with some means to take an interest in a Rolling Mill, situated in one of the best locations in Eastern Fennsylvanis, ready to start on a contract that will take six months to fill; a practical man preferred.

Address
Office of The Iron Age, 220 S. 4th St., Phila., Pa.

WANTED.

A young man of several years' experience in the Hardware business wishes to purchase an established trade in that business, or half interest in the same. One that carries from \$6000 to \$12,000 stock, and in a thriving village of Western or Middle New York. The best of references furnished and required. Address, Townsendville, Seneca County, N. Y.

FOR SALE,

Job Lots and Bankrupt Stocks Hardware. Great bargains offered to the trade.

A. W. WHEELER,

141 Lake St., Chicago, Ill.

WANTED.—By a man of 18 years' experiwe ence in the Hardware business, and who has
been on the road, a situation as traveling sales
man for some Hardware or Cutlery manufacture
or jobbing concern. Unexceptionable reference
given in regard to ability, character, &c. &c. Adtress, ST. JOE, care of Box 1280, Richmond,
Wayne County, Ind.

Trade Report.

Office of The Iron Age, Whidhesday Evening, April 2, 1879

During the past week the chief interest in financial circles has centered in the money market. From causes noted last week, and from the uncertainty attending the future operations of the Treasury, the rates became firm, and borrowers on call could easily secure accommodations at 6 @ 7 per cent. Early in the week, however, the Treasury gave notice that in the April settlement for bonds purchased, the Treasury will draw no money from the banks in payment for 4 per cents until after it shall have paid out an equal amount for 6 per cent. 5-20s redeemed. This removed all apprehension of a stringency in the money market resulting from the Treasury operations. The money market continues firm, however, with no decline below 7 per cent. for call loans on pledge of mis-cellaneous securities, and in some cases 1-64th to 1-32d have been exacted. At bank the uniform rate is 7 per cent. Time loans for 30 days have been made at 6 per cent., and prime mercantile paper has sold at 6 @ 7, such names as are held below that rate not having been marketable to-day except to buyers outside of the city. It is not unlikely that the money market of to-day may continue for several days, but whatever change there is to be from this time forth will be toward an increase of loanable funds. Speculators and money-lenders can make their influence felt at this critical time, and can perhaps prolong for a few days the presant stringency.

Early in the week government bonds declined, but later they advanced, and closed The new second mortgage bonds of strong. the New York, Lake Erie and Western have although the demand has fallen off a trifle been eargerly sought on speculative and investment account; investment shares generally are strong and steady.

In the stock market there has been some speculative activity, chiefly in the stocks which are the favorites with the small operators. We give below the closing quotations of active shares.

The bank return shows a decrease of \$1, 149,150 in surplus reserve, which now stands at \$2,970,300, against \$15,598,400 at this time last year, and \$9,612,075 at the corresponding period in 1877. The loans show a decrease this week of \$3,381,300. The specie is down \$356,900; the legal tenders are decreased \$2,703,700; the deposits other than United States are down \$7.645,800, and the circulation is increased \$221,200.

The following is an analysis of the bank totals of this week compared with that of

Loans Specie Legal t'nd'rs Tot. reserve. Deposits		March 29. \$240,458,500 18,446,800 34,268,900 52,715,700 198,945,600	Dec. Dec. Dec. Dec.	
Reserve required Surplus Circulation.	51,647,850 4,125,550 19,290,900	49,736,400 2,979,300 19,512,100	Dec.	1,911,450 1,149,150 221,200

The foreign trade movements at the por of New York since our last issue are shown in the following tables:

IMPORTS.

Dry goods General mdse	\$1,940,648 6,083,335	1878. \$1,765,151 2,795,911	1879. \$2,267,559 4,163,224
Total for week. Prev. reported	\$8,023,983 76,487,995	\$4,561,063 70,202,072	\$6,430,783 70,683,674
Since Jan. 1	\$84,311,978	\$74,763,134	\$77,114,457
Included in merchandise va		orts were	items of

	Quantity.	Value
Guna	123	16,60
naruware		408
Iron, pig, tons	600	7.572
Iron, sheet, tons		969
Iron tubes	266	574
Iron ore, tons	925	2,120
Iron, other, tons		0,660
Lead, pigs	820	3,228
Metal goods	954	18,600
Naus		402
Needles		7.711
old metal		127
Plated ware	I	484
rercussion caps	6	981
Suddlery		1,000
50001	3.669	22,579
spener	121.206	4,572
Silverware		X 50
IIR, DXS	90 Yex	131,572
III. I200 slabs	m = 0 -	10,540
		6,887
Zine	00.874	4.553

For week en	ded April	I:	
For the week Prev. reported	1877. \$3,901,319 60,652,109	1878. \$6,316,755 82,136,770	1879. \$6,754,971 72,092,407
Since Jan. 1	\$64,553,428	\$88,453,545	\$78,847,378
-			

and only of armore,	
For the week ended March 29:	
Total for the week Previously reported	\$370,366 4,697,558
Total since January 1, 1879	
At the close of business Government were active and strong, and closed	ent bonds

U. S. Currency 6's	**********	Bid.	Asked.
			1065
U. S. 6's 1881 coupon. U. S. 6's 1867 reg			1065
U. 8. 6's 1867 108	* ** ***	. KO214	10231
U. 8. 6's 1868 reg	******* **	.102%	toa34
U. S. 6's 1868 cou		10278	1023/
U. S. 10-40 reg		10272	1023/4
U. S. ze-40 coupon		.102	1021/
U. S. 5's 1881 registered		V028/	80071

highest prices of the day. We quote :

The following were the closing quotations

and the crosing	RECOMMOND	- 4
of active shares :	And the second	
Ri	d. Asked.	10
		7
		3
anada Southern	% 6x34	æ
hicago and Northwest 50	3% 60	
Anada Southern	8856	
Thicago, Rock Island and Pacific130	130%	16
inicago, Bur. and Quincy	1 . 11434	23
lev., Col., Cin. and Ind 41	1/4 42/4	13
Alicago, Bur. and Quincy 130 Alicago, Bur. and Quincy 111 Alev. Col., Cin. and Ind 41 Aleveland and Pittsburgh 91 Alicago and Alton	4. 92%	- 1
meago and Atton 79	% 80%	1
Chicago and Alton		15
Delaware, Lack. and Western 48		118
Delaware and Hudson Canal 40	26 4834	. 8
		10
" American		10
American 48 United States 47	49	15
Wells, Fargo & Co 98	34 9934	1 2
		1 1
rie preferred	1/ 1/2	. 2
Iarlem	3 4378	4
Iannibal and St. Joseph	36 2536	1
Iarlem 15 Iannibal and St. Joseph 15 Pref. 44	34 4434	ш
		11
Cansas Pacific	211/2	17
ansas and Texas	% 9%	15
fichigan Control	71.76	17
ake Shore	85%	11
forris and Essex	34 84%	13
Pref 80	41 41%	1.
New Jersey Central. 35	80%	1
Ohio and Mississippy	74 40 134 19	1
Dhio and Mississippi	36	11
		B
anama	1 135	1.
ittsburgh and Fort Wayne	3% 104%	11
Quicksilver	1234	11
" Preferred 34	36	1
st. Louis, Kansas City North	75%	1.
St. Louis a San Francisco	634	11
uldeksilver 12 Preferred 23 kt. Louis, Kansas City North 25 kt. Louis a San Francisco Pref. 20 Sutro Tunnel 45	7% 8	1
Sutro Tunnel	434	1
		13
Western Union Telegraphof	106%	1
Wabash I	976 20	1

GENERAL HARDWARE.

The condition of the trade is much the same as at our last writing, and the general tone of the market buoyant and satisfactory. The demand from all sections continues active, and we hear no complaints on the score of dullness. In Foreign Hardware the same satisfactory conditions exist, and as regards prices no changes in values are reported.

The Nail business continues fairly active, since the advance reported in our last; the tone of the market is decidedly strong, and we cannot learn of a single instance where the newly-established price has not been fully lived up to. During the month just closed the amount of Nails sold was very large, the sales of one concern (The Oxford Iron Company) amounting to 26,000 kegs ; this is, we are informed, the largest amount sold in any one month during the existence of the company. We continue to quote rod. to 6od., \$2.15, net, for wholesale lots, but for small parcels an advance of 5¢ @ 10¢ per keg would be asked.

The manufacturers of Augers and Auger Bits held a meeting in this city yesterday, at which the existing prices were confirmed The regular discounts now quoted for thes goods are 50 @ 50 and 10 per cent.

Sargent & Co., New York and New Haven, Conn., have issued under date of 1st instant a revised discount sheet, to apply to their 1877 catalogue, to which is added list and discounts for their line of Tuscan Bronze goods, which have been added to their assortment since the publication of the catalogue above referred to. They also pre sent a condensed list of Mallory, Wheeler & Co.'s Door Locks, Knobs, Padlocks, &c., for which they are agents.

The firms named below have issued the following circular concerning the Pennsylvania Lawn Mower :

In answer to numerous inquiries, we wish to state that the Pennsylvania Lawn Mower is made under United States patents issued to is made under United States patents issued to John Braun, dated September 18, 1877, and October 8, 1878; also, under full license of the Everett G. Passmore patents, reissued January 28, 1879, and is also fully covered by patents in Great Britain, Ireland, Germany and Canada, thus fully protecting all parties in selling or using the Mower, either in the United States or foreign countries. in the United States or foreign countries

The above, we believe, is well known by some parties who have been and are now misrepresenting the facts and have tried to intimidate buyers. Soliciting your orders, we are yours truly,
LLOYD, SUPPLEE & WALTON, Phila.

Agents for the Manufacturer. The Stanley Rule and Level Co. have recently introduced a substantial improve ment into the manufacture of their common Sliding T-Bevels, rendering them flush on both sides, and without increasing the prices, The peculiar features of the improved bevels are fully described, and an illustration of the same given, on page 25 of our present issue.

G. B. Walbridge, No. 83 Reade street, has issued his annual price list of Lyon's Patent Shears, Punching Presses, &c. give below that portion relating to new and mproved machines, and refer our readers to his advertisement on page 35, where illustrations of them will be found.

Plate-Iron Shears, for Cutting any Width, Through the Center of Sheet, Lever Works from the Back.

No. 5 will cut 7-16 Plate Iron, weight 650 lbs. \$120.0 The strongest and best Hand Shear made for use in Boiler Shops, and we invite the attention of Boiler Makers and Heavy-Plate Ironworkers particularly to the advantages

This is the best small Power Shears now made; it is an elegent and symmetrical tool, in the construction of which the metal is so distributed as to insure perfect strength and rigidity in all its parts, without adding to its cost by weight that does not increase strength.

No. 4 will punch 1/2 hole in 3/4 iron, in from edge-weight 750 ibs....

No. 5 will punch 1/2 hole in 1/2 in. iron, 7 in. from edge—weight 1150 lbs.... from edge—weight 1150 102.

60. 4, for both punching and shearing ½
iron, 4 in. from edge.

80. 5, for both punching and shearing ½
iron, 7 in. from edge....

This Press, being geared, may be run slow mough for continuous cutting without stoph for continuous cutting without stop e punch, and is of sufficient capacity ing the punch, and is of sufficient capacity for a large part of the work in Agricultural. Tool, Boiler, Iron Railing, Carriage and Wagon Shops. These machines require but little power, run smoothly and quietly, and are perfectly under the control of the operator, who, by a slight movement of the connecting pin, is enabled to stop or start them instantaneously. They can be worked by hand with equal advantage. Larger sizes, and machines for special work, made to order.

Graham & Haines, No. 113 Chambers St., have been appointed sole agents for Adams & Meeker, proprietors of the Detroit Block Works, Detroit, Mich., manufacturers of Iron and Rope Strapped Blocks, Wrought Iron Blocks, Iron Sheaves, Mast Hoops, &c. They will carry a full assortment of these goods in their warehouse in this city, and they inform us that they will compare favorably, both as regards quality and price, with any similar line of goods on the market.

We commend to the attention of manufacturers desiring to have their goods represented in this city or introduced on the road, the advertisement signed "J. A. L.," which appears among special notices on the opposite page. The gentleman advertising olds an important position in the trade, is a popular salesman, and is personally acquainted with the jobbers of Hardware both East and West.

Sidney Shepard & Co., proprietors of the Buffalo Stamping Works, Buffalo, N. Y., have issued their 1879 illustrated catalogue, which will be forwarded to the trade on application, or sent to their customers with goods ordered. The book contains over 500 ages, and is throughout fully illustrated. Of goods of their own manufacture they show a large assortment of Deep Stamped and Re-Tinned Ware, Common Stamped Ware, Plain Pieced Tin Ware, Japanned Tin Ware, including a handsome line of Toilet Sets, Ice-Water Pitchers and kindred goods. They also show a fine line of Japanned Coal Hods, Coal Vases, Ice-Cream Freezers, Water Coolers, Copper Ware, &c. In addition to the large assortment of goods of their own manufacture, they present illustrations and price lists of a great variety of Hardware and House-Furnishing Specialties, for which they are agents.

We invite attention to the advertisement of Goodman's Felt Gun Wads, on another page. These goods are manufactured by B. Goodman, Ansonia, Conn., and No. 7 White street, New York. He claims that they are pronounced by well-known sportsmen superior to any wads on the market. W. K. Ross and J. A. Fuller, No. 95 Chambers street, have been appointed as sales men, and they will furnish further particu-

lars to parties interested. The Millers Falls Company, No. 74 Chambers street, illustrate in their advertisement. on page 25, their improved Family Grind-This convenient little machine is run by foot-power, and will be found exceedingly useful for grinding and polishing table-knives and small tools. It is provided with an Emery Wheel, as well as a Stone, both 8 inches in diameter and 11/2 inches thick. The legs are made to fold up for convenience in shipping. This machine is offered at \$3 each, subject to discount 25 per cent. to the trade.

IRON.

American Pig.-The inquiry for good Lehigh brands for early delivery is active, the demand at present being in excess of the supply; transactions in consequence are considerably restricted, and the sales reported are generally of small lots to tide over present requirements. Furnace owners continue to decline orders for future delivery, and higher prices are freely talked spired during the week, but no large transactions are reported. Prime brands are quoted as follows: Foundry No. 1, \$18 @ \$18.50; Foundry No. 2, \$17 @ \$17.50; Gray Forge, \$16.50.

Scotch Pig.-In Scotch Iron nothing worth mentioning has transpired. We quote: Eglinton, nominally, \$19.50 @ \$20, and Coltness, \$22.

Rails.-There is still a fair amount of equiry for Steel Rails, but the impossibility of placing orders for early shipment in the present crowded condition of the mills prevents the conclusion of pending purchases. In Iron Rails nothing in the way of new business has transpired. We quote Steel, at tide-water, \$45, and Iron, at mill, \$32 @ \$36, according to section, terms of payment, quality, &c.

Old Rails.-We hear of sales Isince our last writing of 3000 tons in lots. We quote \$20 @ \$21, here.

Scrap.—There is considerable inquiry for No. 1 Wrought Scrap, and the sale of 1000 tons on private terms is reported. From all we can learn Scrap Iron is becoming scarce, and the tone of the market as regards price is strong; the asking price for No. 1 Wrought, from yard, is now \$25, and it would be difficult to place an order at a less figure. We quote: \$24 @ \$25, from yard.

The committee appointed at the conference of manufacturers, held in Philadelphia, on Feb. 21, 1879, to revise the schedule .\$160.00 of extras on Bar Iron, have issued

a call for a meeting of manufac turers, to be held at the St. Nicholas Hotel, in this city to-morrow, Thursday, April 3, 1879. The session will commence at 11 a. m., sharp. A large attendance is expected. The chief object of the meeting (as stated in the circular), will be the correction of the schedule of extras on Bar Iron already submitted to the mills, and the final adoption and publication of a schedule which will be recognized as the minimum standard selling extra for the respective sizes by all the manufacturers East and West, when selling in each other's territory.

METALS.

Copper.-Sales during the week sum about 100,000 lbs. L @ 16¢. We quote I the same figure. We Best Selected is wort that Chili Bars are que ceive from mail advice on the 20th ult. Be manded £63; the t still continued downs cipal features involvi: the European Copper tion of Spain. The j the latter country is but it is difficult to pure Copper may, du be actually procured on this important sub at variance, ranging ward. Should the pr Chili remain about the has been of late, a lar would evidently have down prices. If, on export be interfered have indicated in or even a largely incre would not suffice to p ciation in the value of Copper values is tain, but the next me great way toward Meanwhile it is to be in this country may market for Manufact firmer, and there is a tories are reported t with orders, and una dertake large contra We quote: New Si Braziers', 24¢, and 26¢; American Yel 131/2¢; Yellow Metalish Yellow Sheathin currency, in bond. Tin.-Our market has ruled quiet since

our last report in view of the full stock here and excessive afloats for this country. We and excessive afloats for this country. We quote large lines Straits, on the spot, 15% @ 15%; English Refined, 15%; to thit Common, 15%, and Banca, 18%. London cables Straits, £68, and Singapore Wires, \$21.25. Imports since last week are 4360 slabs Straits. Nearly 3000 tons of Straits, Billiton and Australian, are afloat for the United States, and our stock of Straits in New York is estimated at 750 tons. Of Billiton Tin 7000 piculs have been shipped this way, on speculation, and are due here in a month's time from now, but they are included in the time from now, but they are included in the afloats we have mentioned above. Seldom has a metal received such a power-ful speculative support as the one in full force in Europe and here at the present moment, a support which drove the price in London 30 per cent. from the lowest point last fall. Money being a drug in London and Amsterdam, there is no saying how long the metal may continue to be thus successfully upheld or pushed to considerably higher figures. The parties interested manage most cleverly; thus they uphold Singapore at a high figure to prevent the New York and Boston peothus they uphold Singapore at a high figure to prevent the New York and Boston people from getting any from there, and they have as powerful a hand in our own market. We see by mail advices that on March 20 Straits Tin stood £68. 10/ in the English market. Tin Plates.—We alluded in our last to a meeting of Welsh makers then being held, and we have since received a dispatch per cable summing up what has been resolved upon. Makers have determined to hold the price of Coke Tin at 17/, and to curtail production sufficiently to enable them to maintain this price, which is equal to \$5.50 here. The export of Tinplates from Great Britain to the United States in January and February has been 18,132 tons, against 15,722 last year, and 18,132 tons, against 15,722 last year, and British West Indies.
14,577 in 1877. That this large export this Glasware, gs 42 340 way should have affected our market a lit. Nails, kegs... 98 476 way should have affected our market a lit-tle is by no means surprising, but the weak-ness which resulted from it here last month has been obliterated since by the coming forward of brisker jobbing demand, and we are now firm at the following rates & box, ordinary brands, large lines: Charcoal Bright, \$6.25 @ \$6.50; ditto Ternes, \$5.75 @ \$6; Coke Tin, \$5.25 @ \$5.37½, and ditto Ternes, \$5 @ \$5.25.

Lead .- Sales for the week have not ex-Lead.—Sales for the week have not be ceeded 100 tons in small lots. Common Domestic has been selling at 314\$\psi\$, but we think large lots may be had without much difficulty at 31\$\psi\$, for we are assured that there has been some shading from 31\$\psi\$. There is no demand for corroding Lead, which may be quoted nominally at 31/4 @ 31/4. The bulk of Lead out of a stock of 3348. The bulk of Lead out of a second or 10,000 tons here, is still held by one financially strong party; there are, besides, 1500 tons afloat. Spring trade manifesting itself hesitatingly in Lead this year, the outlook, so far as sales and the maintaining of prices so far as sales and the maintaining of prices are concerned, is anything but flattering; in fact, nothing will help us in the long run but a liberal export, and, fortunately, Lead prospects in Europe are rapidly undergoing a most favorable change. Let Spanish production continue to fall off, and we shall furnish the Europeans and Chinese plenty of Lead from here and the Pacific States. Manufacturers have revised their price lists, taking effect the 1st inst., Pipe and Sheet both being half a cent lower. We quote: Bar, 5½¢; Pipe, 5½¢; Sheet, 6¢; Tin-lined Pipe, 12¢; No. 1 Solder, 10¢—all less 10 % to the trade.

Spelter and Zine.—Common Domestic Spelter is moving off very slowly within the range of 41/4 @ 41/4; it may safely be Pilm., gals. 161,971 14,300

quoted 41/2 to-day. We quote Silesian, 51/4 @ 51/4; accounts from Europe are not encouraging, for the decline has not yet been arrested, from all appearances. Sheet Zine is worth 63/8 @ 63/4

Nickel.-A moderate trade is doing in Wharton's American at \$1.25.

Antimeny—Continues in good position; the demand is steady and the supply limited. We quote, between Hallett's and Cookson's, 1156 @ 1256, as extremes; the latter is worth £49 at London, as per cable.

EXPORTS

Of Hardware, Iron, Machinery, Metals, &c., from the Port of New York, for the

iring the week sum up	Week ending April	1, 1879 :
Lake Superior at 153/¢	Stettin.	British Honduras.
Baltimore nominally at		The second secon
e learn by cable that	Quan. V'lue.	Quan, Value.
h £62 at London, and	Ag. imp., pkgs. 211 \$5,224	Cutlery, cs 2: \$65:
	Danish West Indies.	Nails, kegs 20 48.
uoted at £56. We per-		Hdw., pkgs. 3 33: Mf. iron, pkgs. 82 156
ces to hand to-day, that	Hdw., cs 4 300	
est Selected still com-	Ptlm., gals 300 40	Ptlm., gals1145 134
tendency has therefore	Pumps, pkge. 1 93	United States of Co-
	Rifles, case 1 27	lombia.
ward. One of the prin-	Pit'd ware, cs. 6 sgo	
ing great uncertainty in	Sew. mach., cs 6 316	Hdw., pkgs 74 2,247 Shot, bags 30 33
market, is the produc-	Hamburg.	Shot, bags so 33
	and the second s	Pilm., gals6960 7,101
productive capacity of	Lub. oil, g'ls. 16,877 2,992	Sew. mach., cs 21 3 537
no doubt considerable,	Slate, pcs55,998 2,400	Cartridges, cs 4 144
determine how much	Hdw., cs 114 3,076	Mr. iron, pkgs 18. 106
	Mf. iron, pkgs 22 370	Tug boat 1 4,500
iring the current year,	Tinware, cs 17 280	Cutlery, cs 147 3,475 Powder, kegs. 5 22
from there, estimates	C'ge mtls., pgs 257 490	Powder, kegs. 5 22
bject being very much	Wringers, case I 70	Carriage 1 450
g from 12,000 tons up-	Ore, bbls 10 8,500 Sew. mach., cs 61 6,234	Mach'y, pkgs 92 2,511
		Ag. imp., pkgs 24 603
roduction and export of		Revolvers, cs., 2 126
he same this year as it	Mach'y, pkgs. 49 2,900 Carriage, cks. 84 1,865	Zinc, pkgs 3. 190
rge Spanish production		Chili.
e the effect of keeping	I. r. goods, cs 24 791 Brit. ware,pgs 8 514	
	Ag. imp, pkgs. 167 6,759	Mf. iron, pkgs soy 686
the other hand, Chili's	Ptlm., gals. 604, 431 48,025	Hdw., pkgs a96 3,786
with in the manner we	Slates, Cs 32 124	Tacks, cs 150 929
ur last week's report,		Mach'y, pkgs. s3 1,343
	Lea. belt., cs. 5 931 Glassware, cs. 8 264	Sew. mach., cs 56 420
reased Spanish output	Copper, cks 108 20,250	Ptlm., gals28,900 3,434
prevent a notable appre-	Pistols, case 1 430	Glassware, pgs 22 457
of Copper. The future	Revelvers, cs 2 1,140.	Pumps, pkge. z 35
thus extremely uncer-		Saddlery, cs 9 655 Powder, kegs. 3000 7,200
	Amsterdam.	Nails, kegs 300 716
onth or two will go a	Hdw., cs 19 365	Nails, bxs 60 258
rendering it less so.	Ag. imp., pkge 1 42	St'p'd ware,cs to 500
hoped that consumption	Bremen.	St'p'd ware, cs. 10 500 Pit'd ware, cs. 7 942
go on reviving. The		Ag. imp., pkgs 101 1,885
	Hdw., cs 16 505 Mach'y, pkgs. 3 450	Coal, tons 150 600
tured Copper is indeed		Grindstones 30 80
now little, if any, to be		
nation prices. The fac-	Cars 2 1,000	Central America.
o be steadily employed	Ag. imp., pkgs 328 6,700	Saddlery, case 1 34
	Silverware, cs 1 3,000	Hdw., pkge 1 24
ble at the moment to un-	Pit'd ware, cs 1 200	Sew. mach., cs 12 174
ects for prompt delivery.	Carriages,bxs 15 150	Ptlm., gals1300 166
heathing Copper, 22¢;	Belting, bales. 5 530 Mf. iron, pkgs 32 360	Mf. iron, pkgs 12 204
		Windlass 1 30
Bolts, 24¢; Bottoms	Rotterdam.	Tinware, cs 2 39
llow Sheathing Metal,	Ag. imp., pkgs 142 6,348	Cutlery, cs 5 154
al Bolts, 20¢, and Eng-	Lub. oil, gals 1498 467	_
ng Metal, 121/8¢@ 121/2¢,	Pumps, pkgs 6 442	Japan.
18 110001, 12784 @ 12724,	Hdw., cs 19 931	Coal, tons 91 229
	Copper, cks 117 21,993	Glassware, pgs 109 3,531
t has ruled quiet since	Antwerp.	Ptim., gals. 280,000 32,575
ew of the full stock here		Mf. iron, pkgs 9 III
ew or the run stock here	Ptlm., gals.357,500 32,200	Want

Water wheel. x
Glassw're, pgs 8
Lub. oil, bbis. 120
Nails, kegs... 50
Mach'y oil, bbi
Fron rolls, cs. 5
Ag. imp., pkgs. 144
Hdw., cs... 115
Lea. belt., pgs 3
C'ge mtls., pgs 3
Mach'y, cs... 12
Lea. belt., pgs 3
Wire goods, cs 6
Slates, cs... 22
Copper, cks... 12
Cutlery, cs... 19
Cutlery, cs... 19

Exeter.

Coal, tons.... 543
Glasswire, pgs 35
Nails, kegs.... 60
C'ge mits..pgs 35
Guns, cs.... 9
Hdw., pkgs.... 7
Mf. iron, pkgs 303
Ptim, gals.... 1488
Tinware, pkgs 5
Mach'y, pkgs... 3

Metal, cs..... Pit'd ware, cs. Tinware, pkgs Ptim., gais...17, C'ge mtls., pgs Gas fixt.. cs... Mf. iron.

Mf. iron, pkgs. 124 Carriages.... 4

1,536 4,320 1,727 510 150 Hayti. Hayt.

Hdw., cs. ... 127

Mf. iron, pkgs 39

Mach'y, cs. ... 87

Nails, kegs ... 115

Cutiery, cs. ... 14

Carriage. ... 14

Carridges, cs. 43

Ptlm., gais. 17, 237

Powder, lbs. 1, 200

Pit'd ware, cs. 2

Wagons, pkgs 36

Glassw're, pgs 67

Sew. mach., cs 7

Ag. imp., pkgs 23

Rifles, cs. ... 13

Lead, pigs ... 31 Liverpool. 300 448 9,657 5,468 190 1,383 100 610 2,675 60 London Slate, pcs. 121,118 Mf. iron, pkgs 16 C. w'ngers,cs. 38 Water wheel. 1 Venezuela.

Ptlm., gals...16,250 Glassware, cs. 26 Nails, bxs... 3 Hdw., cs... 9 Carriages... 2 Sew.mach., cs. 12 997 990 195 59 973 149 500 892 Cisplatine Republic. Mf. iron, pkgs. 14
Ptlm., gals...30,000
Ag. impl., pkgs. 66
Hdw., pkgs... 81
L'mp g'ds, pgs. 16
Sandpaper, cs. 5 Bilbao.

Ptlm., gals .. 29,115 3,225 Santander. Ptlm., gals....5000

Ptlm., gals. .46,695 4.518 Cuba. Hdw.. pkgs... 254 1,820 Cutlery, cs... 2 138 Glassware, cs. 25 200 Pit'd ware, cs. 2 122 British North Amer-ican Colonies. Constantinople.

Petm., gals.132,000 15,000

· ×79.349 Porto Rico.

Mach'y, pkga. 20 1,037 Glassware, pgs 40 503 11,118 Nails, kegs... 39 108 Mf. iron, pkgs. 5 7 Plm., gais. ...845 1,063 Sew. mach., cs 45 943 173 40 71 1,988 131 52 298 760 134 838 Lisbon.

Ptlm., gals...14,000 1,575 Mach'y, cs.... 2 315 British Possessions in Africa. Mexico. Coal, tons. . . . 1981 7,500 Shot, bxs. . . . 42 Hdw., pkgs. . . 147 Ptlm., gals. . 13,000 7,500 Nails, bxs. . . . 20 Nails, kxgs . . 75 Cutlery, cs. . 10 864 Ptlm., gals...20,000 2,830 Hdw., pkgs... 115 1,354 Ag. imp., pkge 1 9 British East Indies. Ptlm., gals. 267, 190 32,062 Glasgow.

Brazil. Slates, cs..... 53 935
Beiting, bales. 6 1,038
Ag. imp., pkgs 100 2,145
Macn'y, cs.... 4 2,357
Hdw., cs.... 8 184 macn y, pkgs... 2
Nails, kegs... 90
Barrows... 48
L'mpg'ds, pgs 40
Car wheels... 20
Hdw., pkgs... 38
Cutlery, pkgs... 38
Sew. mach., es 22 Queenstown. Ptlm., gals. 142,254 13,158 Cork. Ptlm., gals.. 80,155 7,414 Hull.

Iron, bxs..... 18 140 Hdw., cs..... 471 17,826 Ag, imp., pkgs 16 798 Dutch East Indies. Ptlm., gals., 293,000 38,000 British Guiana. Ptlm., gals. 15,000 1,725 Havre.

Ag. imp., pkgs 673 32,589 Marseilles.

995 Argentine Republic.

L'mp g'ds, pgs s Ptim., gals...20,000 Sandpaper, cs 30 Crucibles, cs. 1 Hdw., pkgs... 360 Ag. imp., pkgs 473 Tinware, cs... 30 China.

Mf. iron, pkgs 329 3,08r Hdw., pkgs... 55 708 Glassware, pgs 45 227 Nails, kegrs... 600 71,400 Ptim., gais. 151,000 17,600 Lanterns, cks. 5 58 Pkg iron, toms. 5 889 Refrigerators. 4 110 Ex'guish'rs, 68 3 339 Pumps, pkgs... 3 239

THEORTS.

Of Hardware, Iron, Steel and Metals into the Port of Now York, for the Weck ending

Steel.

Cortis R.

Cortis R.
Steel, bdls., 326
Naylor & Co.
Old spring steel,
tons. 66
Thompson C. M.
Ralls, 1435
Rods, bdls., 24
Woodford W. O.
Bundles, 123
Bars, 17
Cases, 4
Order,

Metals.

Bank of Montreal,
Tin plates, bxs., 814
Byrze Jos. & Co.
Tin plates, bxs., 1000
Campbell J.
Zinc dust, ck., r
Cort N. L. & Co.
Tin plates, bxs., 646
Harley Geo.
Brass, bags, 28
Jex Wm. & Co.
Old metal, pkgs., 2
Meyer Moritz,
Lear. bars, 939
Naylor & Co.
Tin plates, bxs., 5602
Thelps, Dodge & Co.
Tin plates, bxs., 11,
889

Pope Thos. J. & Bro. Metal, ingots, 5 United States Stamping

Co. Tin plates, cs., 306 Willett & Hamlin, Yellow metal, cs., 100

Order, Quicksilver, bottles

Terne plates, bxs.,

Tin plates, bxs., 5198 Tin slabs, 240

Order, Bundles, 113

April 1, 1878:	
Hardware.	Wolff R. H & Co.
Alexander F. & Sons, Hdw., cs., 28 Ironware, cs., 12	Mdse., pkgs., 3 Weiff S. N. & Co. Ironware, cs., 19
Ironware, cks., 4 Alstan J. & Co. Machinery, cs., 7	Order, Antimony, cks., 25 Anvils, 40
Ansonia Clock Co. Mdse., pkgs, 3 Raldwin Bros, & Co.	Guns, cs., 7 Hdw., bales, 19 Hdw., bdls., 18
Mdse., pkgs., 36 Boker Hermann & Co.	Ironware, cs., 3 Ore, bbls., 8 Sheet iron, bdls., 18
Hdw., cs., 8 Broch & Koch, Steelware, cs., 5	Iron.
Cabbe E. Wire netting, rolls,	Alexander F. & Sons, Bars, 30 Henderson Bros.
Carey Samuel, Grindstones, cks., 14 Cortis R.	McCoy & Co.
Mdse., pkgs., 35 Crispin Col. S. Guns and ammuni-	Bundles, 876 Perkins, Livingston, Post & Co. Spiegraleisen, tons.

Broch & Koch, Steelware, cs., 5	Iron.
Cabbe E. Wire netting, rolls, 123 Gery Samuel, Grindstones, cks., 14 ortis R. Mise., pkgs., 35 rispin Col. S. Guns and ammunition, cs., 24 ton, cs., 24 toller Alfred, Steelware, cks., 3 ougan Alex. & Co. Hdw., cs., 2 olsom H. & D.	Alexander F. & Sons, Bars, 30 Henderson Bros. Iron, tons, 100 McOoy & Ce. Bundlee, 876 Perkins, Livingston, P. & Co. Spiegreleisen, to 1 200 Thompson C. M. Bars, 38 Order, Pig, tons, 200 Rough castings, c. 375

Gen*
Plated ware, cz., r
Hopkins E. T.
Mdse., pkgs., 10
Howard, Sanger & Co.
Mdse., pkgs., 23
Jackson R. D.
Stereotypes, cs., 4
Lewis Bros. & Co.
Mdse., pkgs., 20
Lichtenberg Chas.
Mdse., pkgs., 4 Livingston W. & F.
dvingston W. & F.
Millstones, 15

Mdse., pkgs., 20
Lichtenberg Chas.
Mdse., pkgs., 4
Mdse., pkgs., 4 Livingston W. & F.
Millstones, 15
Grindstones, 1995
Lyon E.
Mdse., pkgs., a
Mason J. W. & Co.
Wire rope, coils,
McCoy & Co.
Hdw., cs., 4
Mdse., pkgs., 3
Morrowa Y D & Co

Ironware, cks., 7 Rothschild & Bros. Ironware, cs., 6
Struller, Lau & Co.,
Hdw., cs., 2
Von Cleff & Co.,
Ironware, os., 6
Wallach A. & E.

Wallach A. & E.
Hdw., pkgs., 2
Wetzlar M.
Mdse., pkge., 1
Wiebusch & Hilger Hdw.
Co.
Hdw. and cutlery,

The whole tone of the market is despond ent. The feeling both among Coal mer-chants and retail dealers in the city is that chants and retail dealers in the city is that a Coal war has begun, and there is no telling where it will stop. The great companies seem each of them to be animated by the hope that, if they can hold out long enough, they will be able to kill off some of their weaker competitors, and so have a better field for themselves. The desire to obtain a large tonnage as a basis for a quota in a future combination may have somein a future committee may have something to do with this eagerness to market Coal at any sacrifice. One has only to turn to the table of production, to see what an enormous tonnage has been forwarded as a enormous tonnage has been forwarded as a result of this effort. According to Mr. Saward's figures, the anthracite production for the year amounts in round numbers to 41/3 million tons. Last year at the same time the production was only 2½ million tons; or, to be more exact, the tonnage for the year up to the 22d of March stands

1879 t	ons.	4,342,502
1878		2,570,027
Increase over 1878		1,771,875

In other words, we are, before the end of March, almost two million tons ahead of last year's production at the same date. There year's production at the same date. There are several causes which will make a better market this year than last, and among them is the fact that this season very little Coal was left over from last year, while last year a large supply was on hand from the previous season Again, the present winter vious season Again, the present winter has been quite severe, and with small stocks laid in on account of higher prices, yards and factories have been very effectually cleaned out, so that as the spring trade opens we shall find both yards and fac-tories with merely nominal stocks. These causes alone would indicate that a These causes alone would indicate that a much larger tonnage will be absorbed this year than last. But the figures we have quoted show that there is to be a supply considerably greater than even the increased market can stand. Prices are beginning to feel the effect of the large pro-duction, and are "away down out of sight," probably as low as they have been in the course of the trade for years. Everything at the present time seems to be in favor of at the present time seems to be in favor of the consumer, except the fact that it is dif-ficult to see how the present state of affairs can continue. Coal is sold at figures far below the cost of production, and the end, it would seem, cannot at the present rate be

OLD METALS. PAPER STOCK, &c.

As was anticipated last week, there has been a general falling off in the demand in the Old Metal market, and stock is rather flat at present. Quotations stand unchanged, however, with the exception of the price of We have no change Lead, which has fallen. whatever to report in the Paper Stock mar

The purchasing prices offered by dealer

for Old Metals are as fo	llows :			
Copper, heavy	per D.	\$0.13	0	
Copper Bottoms	44	.10%	6	
Copper Bottoms Yellow Metal	W ID	.0836	a	
Brass, heavy	44	.0856	@	
Brass, light		Bo.	a	
Composition, heavy.	. 44	.1136	a	1
Lead, solid	44	.08%	0	

Tea Lead	.02%	
Zino	.03%	
Pewter, No. 1	41 .10 @	
Pewter, No. 2	·8 @	
Wrought Ironpr		
Light do	9.50	
Stove Plate	" 0.50 B	
Machinery do	11.00 @	
Grate Bars	1 1.40 (3	
	70 0	~

The prices current for	Rags,	&c., are
follows ·		
Canvas, Linen	per 1	. 3 . C. @ 3%
White Cotton, New		4%c. @
White, No. 1	44	3¾c. @ 4
16 No. 2		
Mixed, Woolen	34	. 1%c. @
Soft, do	44	2 C. @ 3 6%C. @ 7
Mixed Ragu	44	2 C. @ 3
Jute butts		3 C, @
Kentucky bagging		3 C. @
Newspapers	9-6	14c. @ 14
Waste Paper and Scraps		%c. @
Kentucky Bale Rope	46	4 C. @
Tarred Shaking		1 C. @ 1%

Grass Rope Messrs. Du Plaine & Co., Philadelphia under date of 1st inst., quote the market prices for Old Metals as follows, and add:

	In trade for our Manufactured	men	TIR	W	и
	allow 1/2 more per pound."				
	amon /14 more ber beamer	Cent	w 90		n.
	Wearen Old Compan				
	Heavy Old Copper	1472	9	**	* 1
	Light Tinned Copper	.12	69		
	Copper Bottoms	. II	@		
	Locomotive Copper and Tin Bronze	1236	@	5	
	Heavy Red Brass Scrap	. TE	0		
	Light Red Brass Scrap	.10	Ca.		
	Heavy Yellow Brass Scrap	. 0	6		
	Light Yellow Brass Scrap	. 9	60		
	Old Lead Pipe	28/	2		
	Old Junk Lead (melted in mass)	. 373	80		
	Old Junk Lend (melled in mass)	. 374	HEB.		
	Tea Lead	. 378	ND.		
	New Zinc Clippings	. 4 .	0		
	Old Scrap Zinc	. 3%	@		
	Old Battery Zinc	. 3	20		
	Plumbers' Lead Joints	436	2	45	
	No. z Pewter				
	No. 2 Pewter				
	Old Type Metal	. /	8		
	Red Brass Turnings		6		
ı	Ken brass furmings	. 7	99.1	13	
1	Yellow Brass Turnings	. 5	60	0	,
ı	Spelter Dross	. 24	8	ž	í
ı	Lead Dross	. 3/8	@	3	
1	Stereotype or Electrotype Plates	436	@ .		

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St. PHILADRIPHIA, April 2, 1879.

We have again to report continued ac tivity in manufacturing circles. The im-provement seems to have reached every branch of the Iron trade. The Baldwin branch of the Iron trade. The Baldwin Locomotive Works are running full time with 1900 men, and have a large amount of work on hand. Last month they turned out 40 locomotives, and entered orders for about twice that number. In other departments we find very similar reports, and it is quite exceptional to hear complaints of dullness. In all descriptions of Railway equipments there is greater activity than has been known for years. The car-shops are full of work; one firm, manufacturing Steel Tires, inform us that while their business in 1878 averaged 50 per cent. larger than in 1877, the first three months in 1879 is 100 per cent. heavier than months in 1879 is 100 per cent, heavier than any similar period in 1878. In special railway tools, the L. B. Flanders Machine Shops report recent sales of their patent portable rotary valve-seat planing machines and other tools to a number of railways in variance of the country. ous parts of the country, as also some for

We notice that Mr. E. N. Howell, late with the Hazard Mfg. Co., of Wilkesbarre, has opened an office at 218 South Fourth street, Philadelphia, as the sole agent for the sale of the John A. Roebling's Sons Company's wire rope, in all that portion of the United States lying west of the Missouri

River. Keen, Hoyt & Co., of Para, Brazil, have also arranged to be represented by D. W. R. Read & Co., 205½ Walnut street, Phila-

Pig Iron.—The market remains steady and firm at last week's quotations, with a very fair amount of sales, considering the respects there are dis-Pig Iron.—The market remains steady season. In some respects there are discouraging features to be met with, but the steady consumption enables holders to place their products without making any concessions. The investigation of the products without making any concessions. The increasing activity in manufacsions. The increasing activity in manufacturing circles seems to warrant the expectation that the capacity of the furnaces now in blast will be fully required to meet the current demand, so that while this continues there is no reason whatever for prices weakening. Under these circumstances there are no features of special interest; buyers are not disposed to anticipate their requirements at the rates now preceding requirements at the rates now prevailing, and as sellers find their current output easily absorbed, there is no effort to change quotations either on the part of buyer or ler. Another very fa to be found in the fact of the alm plete absorbtion of outside lots, so that those who require Pig Metal have no alternative but to purchase direct from the furnaces which are in operation. The majority of these have sold largely for forward delivery, so that when applications are received from so that when applications are received from buyers, there is no anxiety to sell unless prices are satisfactory. The market during the week has therefore been very steady, and prices more uniform than for many weeks past, the change, if any, being in the gradual stiffening of what has hithorto been considered rather inferior grades. We quote as fair average prices: Gray Forge, \$16 @ \$17; No. 2 Foundry, \$16.50 @ \$17; No. 1 Foundry, \$18 @ \$19.

Blooms—Are firm, and outside figures are now realized in most transactions. We quote as before: Sunken Scrap Blooms (2464 b), \$38 @ \$39; Northern Ore Blooms (2404 B), \$36 @ \$39; Northern Ore Blooms (2240 B), \$33 @ \$37; best quality Char-coal Billets (2240 B), for wire and steel purposes, \$58 @ \$60; Bars do., \$62.50 @ \$65; Sheet Iron Blooms, cornered (2464 B), \$53 @ \$55; Cold-blast Charcoal Plate Blooms, \$50 @ \$53; run-out Anthracite, \$45 @ \$47.50.

doubt the demand will be well maintained for the present. Prices are firm, with an upward tendency, although in the mantime we continue lest week's quotations:
Angles, 2.1¢ @ 2.3¢; Tees, 2.3¢ @ 2.4¢;
Beams and Channels, 2.5¢ @ 2.7¢, accord-

Plate and Tank Iron.—The market shows further indications of improvement, and prices show an advancing tendency. A very fair amount of orders have been placed during the week, especially for Tank and Boiler Iron. Some of the mills have had to decline orders for lots required for the later of the remarks of the same of the mills have had to decline orders for lots required for the later of the remarks of the remarks of the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the same of the mills have had to decline orders for lots required for the mills have had to decline orders for lots required for the mills have had to decline orders for lots required for the mills have had to decline orders for lots required for lots requir had to decline orders for lots required for early delivery, as their capacity is already pretty well engaged for the next two or three weeks. Inquiries seem to warrant anticipations of an active business in the immediate future, particularly for ship-building, bridge-building, &c. A very fair amount of work is in progress at the ship-yards, in repairs and refitting, as well as in building tugs, river steamers, &c. There are rumors current of new orders for large iron steamers, but at present for large iron steamers, but at present nothing definite has been decided upon. nothing definite has been decided upon. The general market may be called firm at about the following quotations: 1.9\(\phi\) @ 2\(\phi\) for Skelp; Common Plates, 2.2\(\phi\) @ 2.3\(\phi\); Tank Iron, 2.2\(\phi\) @ 2.4\(\phi\); C. No. 1, 2.4\(\phi\) @ 2.6\(\phi\); Shell Iron, 2.7\(\phi\) @ 2.9\(\phi\); Flange Iron, 3.7\(\phi\) @ 4\(\phi\); Solid Firebox, 4.8\(\phi\) @ 5\(\phi\), and Best Bloom, 5.5\(\phi\) @ 6\(\phi\). Sheet Iron.-The demand continues

be fair for the season, and prices are firmly maintained. There are no features of special interest, and we continue week's quotations: Common Sheet, week's quotations: Common Sheet, No. 20 to 23, 3.2¢ @ 3.3¢; No. 24 to 28, 3.4¢ @ 3.5¢; Best Refined Sheet, No. 25 to 28, 3.6¢ @ 3.7¢; No. 16 to 24, 3.4¢ @ 3.5¢; Best Bloom Sheets, No. 16 to 24, 5.5¢ @ 5.7¢; No. 25 to 28, 5.8¢ @ 6¢; Refined Plates or Blue Annealed, 5-16 to 16, 2.6¢ @ 2.7¢; Best Bloom, 5-16 to 16, 5.3¢ @ 5.5¢; A Patent Planished, 10½¢; B Patent Planished, 9½¢; Best Bloom Galvanized, 45 % discount: second quality, 55 %; vanized, 45 % discount; second quality, 55 %; extra discounts for large lots.

Bar Iron.-The market continues in the same quiet condition as noted in our last re port, although there is greater firmness port, although there is greater firmness than might have been expected in view of the efforts of Western firms to place their products in this section. The mills had sold largely previous to the advance, so that their customers would not be likely to run after "strange brands" unless they really were in need of stock. For this reason we believe that very little success has followed the attempt to break the Eastern market. The writer of this report cannot refrain from placing upon record his entire dissent from the editorial remarks of last week. I do not consider it necessary to make any comparison between the quality of Pittsburgh and any other Iron. The trade here are perfectly well aware that a first-class article may be had from Pittsfirst-class article may be had from Pitts-burgh mills, but equally certain that it cannot be made and sold in this market at nearly \$5 ?? ton below Philadelphia prices. This is just where the scepticism comes in. Intelligent merchants "do affect to believe, and do not hesitate to state" that the Iron offered in this way is of comparatively inferior quality. The is of comparatively inferior quality. The city mills to-day can take all the orders they want at 1.9¢, notwithstanding the boasted offer of 1.80¢ from Pittsburgh. Buyers are not likely to pay \$2.24 per ton more for the sake of a mere prejudice. There are some brands made in Pittsburgh, which, if offered here at the price named, would be eagerly accepted. These, however, so far as I can learn, are not offered, as they can be placed nearer home at better prices. Our report of last week quoted Bar Iron, 1.75¢ @ 2¢. of his week quoted Bar Iron, 1.75; @ 26.
This, I believe, covers the whole ground.
Several mills use Old Rails very largely, but
they do not claim to make Best Refined Iron. they do not claim to make Best Refined Iron. The product is sold on its merits, and I have little doubt that Iron made from Old Rails in Philadelphia is quite equal in quality to Iron made from Old Rails in Pittsburgh, although not equal to the best brands of Philadelphia Refined Irons. Referring to the second paragraph, I indorse the statement that for some grades of Iron. Old Rails answer the nursesse as of Iron, Old Rails answer the purpose as well as Muck Bar, if cheapness is the object to be attained. The writer of the article claims "to have been at some trouble to get claims "to have been at some trouble to get at the facts," and states that the "entire re-ceipts of Old Rails at Pittsburgh for the three months ending March 15 amounted to only 90 tons." If there was an honest de-sire to get at facts and that statement is the most correct that can be made as the result of all the trouble, your informant can scarcely be called a success as an investigator. To use a common expression, I do not intend to "give away" either buyer or seller, but it is susceptible of the most absolute proof that upward of 15,000 tons of Old Rails have been bought in this market for Pittsburgh consumers within the time named posted in the trade well under stand, however, that the periods of the heaviest receipts of Old Rails in Pitts-burgh are in the spring and fall of the year. The three months ending March 12, therefore, give no indication of the actual consumption. It is a singular coincidence, too, that one of the firms first in the attempt to break this market have been heavy buyers of Old Rails during the been heavy buyers of Old Rails during the past winter. Having made this reply, I now trust that the subject will be dropped. Prices have been very unremunerative dur-ing the past three years, but in view of the general improvement in business there is no reason why the ironmasters should not realize some share of returning prosperity.

Steel Ralls.—The only feature of interest to report this week is the rumored purchase of 12,000 tons of Steel Rails by Mr. Vanderbilt, from one of the English manufacturers. The price is said to be about \$55 in New York, subject Muck Bar.—The demand is less active, but for good qualities equivalent to \$31 to \$31 to \$33 at tide has been obtained during the week for several lots of from 200 to 500 tons each. The market may be quoted steady at the above figures.

Structural Iros.—The demand continues to be of an active character, and although no large transactions can be reported, the aggregate for the week is quite satisfactory. There are a good many orders on the books of the manufacturers of but for good qualities equivalent to \$31 to be about \$55 in New York, subject to some guarantee as to the wearing quality of the rails. We have no definite information further than that such a transaction formation further than that such a transaction has been closed, but it may turn out that the purchase is on account of the Canada Southern Road, and that they will go the rails of the value of the rails of the rails.

Structural Iros.—The demand continues to be of an active character, and add Southern Road, and that they will go the rails of the rails. We have no definite in rates they can obtain. Being without capital or credit they are obliged to sacrifice their products to raise funds, as a rolling mill cannot be operated without money in the satisfactory. There are a good many orders on the books of the manufacturers of business, but usually small lots at full market prices. There is no scarcity of business, but with the large amount of workers would more than offset the reduction should be able to successfully meet competition, of business, but with the large amount of workers would more than offset the reduction should be able to successfully meet competition, of business, but twith the large amount of workers would more than offset the reals.

further orders. One sale of 5000 tons is said to have been made a few days ago, but we have not been able to obtain any particulars. We quote from \$43 @ \$45 at mill, according to location, &c.

Old Rails.—There has been an active demand during the week, and something like 12,000 tons placed within the past three or four days. The Cambria Iron Company have sold a large portion of the above, the balance being mostly in lots of a few hundred tons each. There are still many inquiries, and orders to a large amount will no doubt be placed at an early date. Holders are firm in their views, and require cash or undoubted security. It is an encouraging feature that buyers seem better prepared in this respect than at any time since the panic, and prompt cash is frequently offered as an inducement for low prices. The demand is chiefly from the West, and the lots sold during the week are largely for shipment in that direction. We quote the mar-Old Rails,-There has been an active de

sold during the week are largely for shipment in that direction. We quote the market firm at \$33.50 @ \$35.50, according to section of rail, location of mill, &c.

Spikes.—The demand is well maintained, at the following prices: 5½x9-16, 2½¢; ¼x4 and longer, 24-10¢; 7-16 x4, 2½¢; ¾x3¼ and longer, 28-10¢; ½x and longer, 29-10¢.

Old Rails.—We cannot learn of a single transaction during the week, and although there are inquiries from bona fide buyers, no lots are offered for spot delivery. Last sale was at \$22, and for good qualities the sale could be duplicated.

Scrap Iron.—The market is very quiet, and buyers are not disposed to pay as high as they did a week or two ago. A lot of as they did a week or two ago. A lot of about 1500 tons is expected to arrive from England, which, in the meantime, has a ten-dency to weaken the market. We quote Cast at \$12 @ \$14.50. Wrought, \$20 @ Cast at \$12 @ \$14.50. \$22.50. Market quiet.

Nails.—There is a very fair demand, and the advanced price is readily obtained. We quote the market active and firm at \$2.15 for wholesale lots.

PITTSBURGH.

Office of The Iron Age, 77 Fourth Avenue, Privisuren, PA., April 1, 1879. The weather continues unfavorable

outdoor work, and business of all kinds is being retarded and curtailed in consequence; very little new building has been commenced as yet, although there is a good deal contemplated here, and, we have no doubt, elsewhere. We have had, with the exception of a few days in the early part of March, a continuation of winter since it set in the latter part of November, and there has been very little outdoor work done during the time in question. The backwardness of the season, there is no doubt, has much outdoor work and business of all kinds is time in question. The backwardness of the season, there is no doubt, has much to do with the light demand for all kinds of goods, and the bad roads are not without their influence in the same direction.

Pig Iron.-There has been but little change in the situation during the past week. The market continues in an unsettled and unsatisfactory condition, with but little, apparently, that is encouraging in regard to the immediate future. That there is no marthe immediate future. That there is no margin at current rates is admitted by consumers, as well as producers; but then they claim, and we believe it is true, that the raw article is bringing fully as much relatively as the products, and that without an advance on the latter, they cannot stand any increased cost of the former. If the producers his tree week only resistantly ducers of Pig Iron would only persistently demand an advance they would obtain it, and if the raw article was advanced a dollar and if the raw article was advanced a donar or two per ton, the products would soon sympathize. We may be mistaken, but it looks to us as if the former must be the first to make the upward movement. The ordi-nary grades of both mill and Foundry Iron are bringing no better prices now than at are bringing no better prices now than at the first of the year, although in view of an increased cost of production and some holders being out of the market, there is a firmer feeling, and with anything like an active demand, an advance would be inevitable. Bituminous Coal-smelted Irons are still quoted at \$18.50 @ \$20, 4 mos., for Foundry, and \$17 @ \$18.50, 4 mos., for Mill, the latter Red-short, cinder mixture. The market for Bessemer Iron continues in an unsettled condition, and prices are so irreguar that it is difficult to give accurate qu tions. Producers generally are asking from \$21.50 to \$22, 4 mos., but so far as we can learn there have been no purchases made here above \$20.50, 4 mos., and a sale of 200 tons is reported at \$19.50, cash. Producers claim that they must have \$2 \$\text{ fon more than}\$ last year to cover the increased cost of production and afford a small margin for profit; and, moreover, the indications are that the demand for Bessemer this year will exceed that of any former year. Hanging Rock Charcoal Irons continue quiet and unchanged; "Pine Grove" is quoted at \$25, \$23 and \$21.50, 4 mos., for Nos. 1, 2 and 3, and "Ohio" at \$22, \$21 and \$20; Coldblast, \$32 @ \$35; Eastern do., \$29 @ \$30. Coke Irons are firmer, but no better; sales of Mill at \$16.50, 4 mos.; some holders are asking \$16.50, cash. Blooms may be quoted at \$44.6 \$55. or to cover the increased cost of pro at \$45 @ \$55.

Manufactured Iron.—There has been nothing particularly new developed during the past week. Business continues moder-ately active, although it is backward, and prices are just as unsatisfactory as ever.
The great drawback with our Pittsburgh
Iron men is the high cost of labor as compared with competing points, and the success of the recent strike of the coal miners means dearer coal—a very important matter to a rolling mill. The mills are all in oper-ation, some of them running double turn, but they are making no money. Some of them, we apprehend, will be satisfied if they suc-ceed in holding their own. The responsition by steadier employment. The cost of transportation to all points from Pitts-burgh by rail is cheaper now than ever be-fore, but it is equally as important to have cheaper labor, both of which are of vital importance to the iron business of Pitts-

Nails.—There is no improvement to note Nalls.—There is no improvement to note in this important interest; on the contrary, it is worse now than at the date of our last report. While there is no abatement in the inquiry, prices are weak and lower at Wheeling, where a \$1.00 card has been issued, two per cent. off for cash, and the indications are that the Nail trade of Pittsburgh will be almost a blank this spring, as our manufacturers appear determined not our manufacturers appear determined not to sell while the prices obtainable do not cover actual cost of production. Some of cover actual cost of production. Some or the Wheeling factories are still in operation, but as the cost of production is about the same there as in Pittsburgh, it is evident that they are making no money; but then they are anxious to hold their trade. A Wheeling manufacturer who was in the circ Wheeling manufacturer who was in the city the other day, said that they could hold their own at \$1.90 rates, but this is doubt-ful—it is a disputed point.

Railroad Spikes.—There is a continued active demand, and the recent advances are fully maintained, 21/4 P B., 30 days.

Horse and Mule Shoes.—There is a fair business, but prices have undergone no change for several months.

Steel.-There is no abatement in the de-Steel.—There is no abatement in the demand. The mills are all busy, some of them unable to keep up with their orders, and prices are steady, but unchanged. The consumption appears to be on the increase, and the fears entertained some time ago of overproduction are not likely to be realized.

Wrought Iron Pipe.-There is rather wrought from Fipr.—Incre is rather more doing, and with some good weather business will be still better, but prices continue unsatisfactory, with but little prospect of any improvement. Discounts on steam, water and gas pipe, 35 @ 40, from new, and 65 @ 70 from old list. Boiler tubes, 45.

Rails.—Steel Rails still quoted firm at \$43.50 @ \$44, cash, delivered free on board cars in Pittsburgh, with the mill here sold several months ahead. Old Iron Rails are quotable at \$22.50 @ \$23, gross, the outside figure being asked for those of a superior quality.

Scrap .- The market continues quiet, and, so far as we can learn, devoid of anything new or important; prices rather firmer, but unchanged. Old Car Wheels, \$20 @ \$20.50, gross; Cast Borings, \$10.50 @ \$11; No. 1 Wrought Scrap, \$22.50, net; Boiler Scrap, \$22.50 @ \$23; Wrought Turnings, \$15; Railroad Axles, \$28; do. Car Springs, \$31. Window Glass.—The inquiry continues

quiet; the factories generally are busy, some of them unable to catch up with their orders, and the outlook is very favorable for a good spring and summer trade. Prices are firm, with no disposition to contract very largely for future delivery, from which it is evident that manufactures are not appropriate. that manufacturers are not apprehensive of a backward movement; nor at the same time is there any probability of an imme-diate advance. The margin at current rates is small, but the trade realize the situation fully. They know advanced prices would increase production by causing works now idle to "blow in;" hence there is not likely to be any effort made, for the present at least, to put up prices. We continue to quote at 75 and 5 to 75 and 10 per cent. dis-count for car-load lots. We continue to

count for car-load lots.

Coke.—The miners employed in the mines of the Connellsville Coke region have struck for three cents per bushel for digging Coal—the same rate that is now being paid to the miners in the Monongahela Valley. At a meeting of the Coke manufacturers last Saturday the matter was fully discussed, and it was determined not to accede to the demands of the miners. The enhanced price of Coke within the past few months has curtailed the consumption somewhat; some of the pig-iron furnaces that had been using it have gone back to Coal, while others contemplate building ovens to make their own Coke. The advance asked by the miners and other laborers employed at the ovens, it is said, would add 20 per cent. to the cost of production, and this, it is claimed the ovens, it is said, would add 20 per cent. to the cost of production, and this, it is claimed most emphatically by those who are in a position to know, the market cannot stand. At a further increased cost many of the Pig furnaces would, no doubt, discard it and go back to Coal again, as there has been no improvement in the price of Pig Iron. We continue to quote at \$1.15 @ \$1.25 % ton for Coke, delivered free on board cars at ovens.

Coal.—The conflict between the Coal op-erators of the Monongahela Valley and the miners, which lasted for several months, has been brought to a close by the former per bushel, the price demanded by the miners. It is understood that there is still a hitch, however, the miners asking that those who went in at 2/2¢ per bushel, as a number did, be discharged; and it is also intimated that they are disposed to demand steady work for a given time. Neither of these requirements, we apprehend, will be complied with by the operators, nor do we complied with by the operators, nor do we think that they will be pressed very strongly by the miners. Some of our heaviest operators had contracts which they are under bond to fulfill, and being apprehensive that the miners might hold out until the river got too low for running Coal, they came to the conclusion to pay the miners the 3¢ for the present, and to their action may be attributed the ending of the strike. One good effect of the strike has been to reduce stocks in the down-river markets, and there is no doubt that the miners in the aggregate lose

doubt that the miners in the aggregate lose more by it than the operators.

P. S.—Since the above was written the miners, at a public meeting, passed a resolution the substance of which is that they will not press the requirement asking for the discharge of "black sheep."

Petroleum -There has been but little change in the situation during the past week. The actual consumptive demand for the raw article continues light, unusually so the raw article continues light, unusually so for this season of the year, as the most of our refineries have been stopped for several months past, and they are not likely to be started up until there is a largely increased export demand for Refined, which it is not

likely will be much longer delayed. The prolikely will be much longer delayed. The production of the raw article continues large, estimated at 43,000 barrels per day, while the visible supply is the largest in the history of the trade, estimated at between 5,000,000 and 6,000,000 of barrels; hence it is not strange that prices are low. As soon as the export season fairly opens up we look for an improvement in prices, and not until then, as there is nothing else to warrent an appreciation.

CHATTANOOGA.

Office of The Iron Age, Market and 8th Sts., CHATTANOGGA, March 31, 1879.

There is no material change to note in the general market here, nor in general business. Farmers are well on with their spring labors, though they are still busy at home. The weather has been very warm, almost summer-like, during the entire week, and vegetation is coming forward wonderfully fast. In the general Iron market, mill operators in this district say their area of trade is being gradually circumscribed by the emptying of accumulated stocks from the Pittsburgh and upper Ohio mills into the cities, from Paducah down to New Orleans, at prices which will certainly not pay the at prices which will certainly not pay the manufacturer, but which will permit of their material being carried by second and third purchasers considerable distances in-land. We hear of assorted lots of Merchant Bars being placed in New Orleans at \$1.80 by Pittsburgh mills, which would be about \$1.65 at the mills

\$1.65 at the mills

Pig Iron.—There is nothing new in the market. The movement is steady and quiet. The scarcity of high grades continues. Coke Irons—No. 1 Foundry, \$17.50 @ \$18.50; No. 2, \$16 @ \$17; Gray Forge, \$14 !@ \$15. White and Mottled, \$12 @ \$13. Hot-Blast Charcoal—No. 1 Foundry, extra, \$20 @ \$21; ditto, \$18 @ \$20; No. 2 Foundry, \$16 @ \$18; Gray Forge, \$16 @ \$18; White and Mottled, \$15. Cold Blast Charcoal—Car Wheel Metal, \$22.50 @ \$27.50; do., Extra Standard, \$24 @ \$29.50; Forge, \$17 @ \$22.

Muck Bar.—\$27 @ \$34. Old Rails \$18

Muck Bar.—\$27 @ \$34. Old Rails, \$18 @ \$18.50. Old Car Wheels, \$18. Wrought Scrap, \$17 @ \$19.

Ores.—Brown Hematite, 50 to 56 %; per ton, \$1.75 @ \$2.25. Red Fossiliferous, 50 @ 56 %; per ton, \$1.20 @ \$1.60. The above prices for ores delivered in Chattanooga on cars, or on the wharf from flat boats.

Nails.—The mills in the district are running full and getting rid of their product at \$2.25 rates. The lower Mississippi and lower Ohio cities, and many small places inland, are being supplied by Western Association mills. They are selling in Memphis at \$2.05 rates, and at \$2.07 @ \$2.10, as per quality, in New Orleans.

Manufactured Iron.—The Pittsburgh Manufactured Iron.—The Pittsburgh mills are putting their products down at Memphis at \$1.70. The freight is 12½¢ per hundred, which gives \$1.57½ at the mill, a little less than good iron can be made for. We make no change in figures. The mills here have plenty of work, but the Pittsburgh raid has a tendency to depress prices. We quote: Bars, \$2; Railroad Spikes, \$2.50; Light Rail, \$2.25; Track Bolts, \$3; Testle Bolts, \$4.

Coke.—Washed Foundry, 11¢ @ 15¢ † bushel, free on cars in Chattanooga. Furnace in full supply at \$2 † ton.

Coal.—There is no change in the market nor in prices. We quote run of mine, free on cars in Chattanooga, at \$1.25 @ \$1.75 % ton. Lump, as per quality, 10¢ @ 12¢ %

Pig Lead-4¢. Ingot Copper, 18¢. Iron Rails.—We quote at \$35 % ton.

Pig Iron.—The trade in Pig Metal during the past week was not quite so good as for the fortnight previous in general Irons. Bessemer Steel Metal, however, was more in demand, and assumed a much firmer tone. Furnaces are generally unwilling to make contracts for future delivery at prices at all corresponding to those ruling for present delivery. Where \$20 at the furnace is now asking and obtained for immediate delivery, \$23 is the lowest that will be named for contracts running many months ahead. The furnaces heretofore running for Bessemer Metal are now contracted so far forward as to completely use up all their old stocks of ore. Charcoal Iron is not in as good demand at this contracts in the second as the Charcoal Iron is not in as good de mand as thirty days since. There is still, however, a much greater activity than at this time last year, and no weakening in prices. Foundry Irons are in demand, and mill grades are looking up.

Manufactured Iron and Nails.—Bar Iron is about the same. There is a strong competition for sales for immediate de-livery, but higher prices are asked on for-ward deliveries. Nails are looking up.

Serap Iron.-All kinds of Scrap are mand, and prices are firm.

[The error in the quotation of Republic ores at Cleveland, which, in a correction published last week, was attributed to our Cleveland correspondent, was our own mistake, as we subsequently found that \$7, and not \$7.50, was the price quoted by him. We regret that this fact escaped our notice at the time the correction was made.—Ed. The Iron Age.]

BOSTON.

MARCH 29.—Pig.—There continues to be a fair degree of activity in the Iron market, with few changes in quotations. Pig is selling steadily, and the best brands cannot be purchased below \$17.50 in the primary markets. The demand for Scotch Pig is light and prices are somewhat nominal. Manufactured Iron generally is firm. Nails continue somewhat unsattled. Sheet Iron continue somewhat unsattled. factured Iron generally is firm. Nails continue somewhat unsettled. Sheet Iron continues to sell at 2%¢@ 3¼¢ B lb. Russia is quiet at 11¢@ 12¢. We quote English Spring Steel at 7¢@ 8¢, gold; 8¢@ 11¢ for German; 9¢@ 10¾¢ for Machinery; 14¢@ 15¢ for Cast; 9¢ for Lot of @ 12¢ for Blister; 8¢ for American Spring; 13¢@ 13¾¢ for Cast; 9¢ for Blister, and 7½¢@ 8¢ for Machinery. In Plate Iron there continues to be a fair degree of activity in Tank, which is selling steadily at 2¼¢. Boiler Plate is very dull, quoting 2½¢ for No. 1 Charcoal; 2½¢@ 2½¢ for No. 1 Shell, and 3½¢ for Flange. Merchant Bar jobs at \$1.65@\$1.75. Copper continues to favor the buyer, and the transactions have been limited. Consumers are anxious to put off their purchases as transactions have been limited. Consumers are anxious to put off their purchases as long as possible, awaiting the reopening of navigation. The Bulgaria, from Liverpool, brought 357 pkgs. Yellow Metal, Thayer & Lincoln. For manufactures we quote: New Sheathing at 24¢ @ 26¢. The outside price rules in small transactions, but large buyers are purchasing at the inside figure. Bolts are quoted at 26¢ @ 28¢. Yellow Metal Sheathing continues easy, quoting 12½¢ @ 13¢ for t at 26\$\psi as 28\$\psi\$. Yellow Motal Sheathing continues easy, quoting 12\psi\$\psi\$ @ 13\$\psi\$ for English, and 13\$\psi\$ @ 13\psi\$\psi\$ for American; Yellow Metal Bolts, 18\$\psi\$ @ 20\$\psi\$. Lead continues easy at the decline. We quote: Pig, 4\$\psi\$, currency; Sheet, 6\psi\$\psi\$, Pipe, 6\$\psi\$; Tin-Lined Pipe, 12\$\psi\$; Bar Lead, 6\$\psi\$; all of these excepting Pig are subject to the usual trade, or 10\$\psi\$ discount. Antimony is in light demand, but is steady, and we quote 12\$\psi\$ @ 12\psi\$\psi\$. Spelter is dull, being held at 5\$\psi\$ for the various grades. Tin is quiet, and the previous prices are sustained. We quote: Straits, 15\psi\$\psi\$\psi\$ @ 15\psi\$\psi\$. Banca, 20\$\psi\$; Reflued English, 15\psi\$\psi\$\psi\$. @ 15\psi\$\psi\$. We quote Plate: Charcoal, I. C., \$6.75 @ \$7\$; Coke, \$5.50 @ \$6\$; and Charcoal Terne, \$6.25 @ \$7.50.—Commercial Bulletin.

LOUISVILLE.

Messrs. GEO. H. HULL & Co., under date of March 31, write us as follows: The market remains active. Prices are firm, but unchanged. We anticipate a gradual advance on all grades of Pig metal. The usual time, 4 mos., is allowed on the quotations below: tions below:

	No. 1 Hanging Rock, Charcoal\$21.00 @ 23.00
	No. 2 " " 19.00 @ 20.00
	No. 1 Southern, Charcoal 19.00 @ 20.00
	No. 2 " " 17.00 (0.17.50
h	No. r Hanging Rock, Stonecoal and
	Coke 10.50 @ 20.00
	No. 2 Hanging Rock, Stonecoal and
	Coke 18,50 @ 19,00
	No. 1 Southern, Stonecoal and Coke 19.00 @ 19.50
	No. 2 " 18.00 @ 18.50
	"American Scotch" 18,00 @ 19,00
	Silver Gray 16,00 @ 17.00
1	MILL IRONS.
	No. 1 Charcoal, Cold-short and Neut'l. 16,50 @ 19.00 No. 1 Stonecoal and Coke, Cold-short
	and Neutral 17.00 @ 17.50
I	and Neutral 16.50 @ 17.00
Ì	No. 1 Missouri and Indiana Red-short. 20,00 @ 21,00
1	White and Mottled, Cold-short and Neutral 15.00 @ 15.50
Ì	CAR WHEEL AND MALLSTARLE IRONS.
Ì	
1	Hanging Rock, Cold-blast

W. B. BELKNAP & Co., Iron and Steel w. B. BELKARP & Co., Iron and Steel merchants, Nos. 113 and 115 West Main street, under date of March 31, report as follows: It begins to look as though we were not to have the pleasure of recording any spring tidal wave this season. The cur-

No. 1 Hanging Rock \$23.00 @ 24.00	ı
No. 1 Tennesse and Alabama 20.00 @ 21.00	L
No. x Missouri 20.00 @ 21.00	F,
COKE.	ŀ
	1 1
No. 1 Hanging Rock\$21.00 @ 22.00	1.
No. 2 " "	П
NO. I Tenn., All. and Ga 20.00 @ 21.00	п
No. 2 " " 19.00 @ 20.00	H
FORGE IRON.	ľ
No. 1 Tenn., Ala. and Ga\$17.00 @ 17.50	
No. 1 Tenn., Als. and Us	ŀ
No. 1 Missouri 17.00 @ 17.50	ı,
COLD-BLAST CAR WHEEL,	L
Tanging Rock\$32.00 @ 35.00	1
enn., Ala. and Ga 28.00 @ 30.00	1
fissouri 28.00 @ 30.00	١,
	Ľ
SELVER GRAY.	H
Ianging Rock\$17.00 @ 18.00	h
onn Ala and Ga	81
old Rails, gross	ľ
old Car Wheels, gross 20.00 @ 21.00	1
cotch Pig @ 28.00	11
20,00 Lag (g) 20,00	Ľ
	16
CITATOTATATA A DEST	

CINCINNATI.

Messrs. E. L. HARPER & Co., under date of March 31, write us as follows: We have to report a steady, regular market, mod-erately active, and with no material change in prices since the date of our last report:

the barroon armon and dieso or our w	at report .
HOT-BLAST FOUNDBY.	
Hanging Rock C. C., No 1	\$25,00 @ 22.00
C. C., No. a	10,50 @ 20.00
Hanging Rock Coke and S. C., No. 1	17.50 @ 20.00
S. C., No. 2.,	15.00 @ 17.00
Virginia Coke, No. z	19.00 @ 20.00
" No. 2	18.50 @ 19.00
Shawnee Am. Scotch, No. z	20,00 @
4 S. C., No. 2	17.00 \$ 18.30
Hocking Valley S. C., No. 1	19.00 0 20.00
8. C., No. 2	17.00 @ 17.50
FORGE IRONS.	The second second
Langing Rock, No. 1 C. C.	19.00 @ 19.50
langing Rock, No r Coke	17.00 @ 17.5A
ongdale No v Coke	28 m (0)

		THE RESERVE OF THE PERSON NAMED IN
9	Ala, and Tenn. No. z C. C	17.50 @ 18.00 18.50 @ 19.50 15.50 @ 16.00
	Old Rails, primecash,	ceres @ ceres
	CAR WHEEL AND MALLEABLE	
3	Hanging Rock C. B.	28.00 @ 30.00

BALTIMORE.

Mr. W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of March 31: Trade has ruled somewhat more quiet for the past week. Values continue firm and unchanged:

Refined Bar Iron, 1 to 6 by 36 to 1 19	D	1.90	0	2	
" 1 to 41/2 by 11/2 to 2	66	1.90	a	2	
" " 16 to 2, Round		2.90		-	*
and Square	86	1,00	03	2	
Hoop iron, 11/2 wide and upward	6.6	236	0	23	16
	66	236	a	21	60
Horse-shoe Iron	66	2	a	28	10
Norway Nail Rods	41	434	ä	53	60
Black Diamond Cast Steel	66	1256	0	13	4
Machinery Steel	66	7	6	- 8	è
Cast Spring Steel	44	43%	6	× 1	c'e
Homogeneous Steel Plate	66	4/4	6	51	16
Common Horse Nails	66	10	6	74	
R. R. Spikes, \$16x0-16		21/46	0	21	10
Perkins' Horse shoes, & keg of 100 l	ba.		8	2.6	216
" Mule shoes				4.6	
10	9	8	7		5

Messrs. R. C. HOFFMAN & Co., Iron and Messrs. R. C. HOFFMAN & CO., 17on and Commission Merchants, No. 23 South Fred-erick street, report the Pig Iron market as follows, under date of March 31: Below we present prices for Pig Iron and

dage brosen	P	11000	LOI	W 46	HOH	COLLEGE
Blooms, with	fair	dem	and	:		
Baltimore Charc	foor	Who	I Two		0-4	-0
Danumore Char	AUG84	AA TEGA	OI APO			
Virginia "			**		. 27.00 @	30.00
Anthracite No. 1					. 10.00 @	20,00
" No. 2					. 18,00 @	
" No. 2					12.00 @	18.00
" Mott	led s	and V	Thite		. 17.00 @	74.00
Chancal C D	The same	*****			. 13.00 W	14.00
Charcoal, C. B.	R10 0	mg			. 50.00 @	52.00
44 44	\mathbf{Bille}	tu			. 52.00 @	55.00
Refined Blooms					. 45.00 @	50.00

RICHMOND.

Mr. Asa Snyder, Iron Merchant and Furnace Agent, writes as follows under date of March 31: This market continues firm for Old Rails and Wrought Scrap Iron at quotations. Inquiry for Foundry Pig Iron is not so active. The following figures represent the market:

the market:	
American Scotch Pig Iron	\$21.50 @ 22.50
Anthracite, No. 1	19.00 @ 20.00
No. 2	
NO. 3	
" Mottled	14.50 @ 15.50
Coke, No. 1	19.00 @ 20.00
" No. 2	18.00 @ 19.00
" No. 3	
Va. Cold-blast Charcoal, Cold-si	hort 20,00 @ 23,00
	al 27.00 @ 28.00
Va. Warm-blast " Cold-s	
Va. " Red-sl	
Old Rails	
Wrought Scrap No. 1	17.00 (4 18.00
Cast " (machinery)	15.00 (2) 16.00
Richmond Refined Bar Iron	2C. @
Horse Shoes per keg	
14-1-1-	
Old Dominion Nails, Standard 8	
keg	2.25 @

Freights to Philadelphia, \$1.40 per ton of 2240 Bs. by sail.

Freights to New York, \$1.60 per ton of 2240 lbs by sail.

LONDON, ENG., March 17, 1879.

A REVIVAL OF TRADE is just now more hopefully spoken about and written of than at any time since the ad-vent of the long period of depression. I do not count myself as being one of those who take

come about the resumption of peaceful in-dustrial pursuits throughout Eastern Eu-rope, one of the first results of which welcome change is an account. welcome change is an enormous expansion of Russian trade. Merchants writing from Moscow and St. Petersburgh report that they have been most agreeably disappointed since the termination of the war, and that instead of the people being in a state of incipient or chronic bankruptcy, they are ordering all sorts of hardwares, machinery, implements, &c., most freely, and display every disposition to meet their payments promptly and fully. From Bulgaria, Roumania and Turkey the reports are similarly hopeful, while the shadow of British protection which has been thrown descendants of Ham. India, too, is considered to be to a great extent undeveloped, and its capabilities are believed to be likely to be greatly augmented by the additional authority and territory which will result from the Afghan expedition. As regards our many outlying colonies, more is also expected from them before long, as, with the exception of Australia, they are all believed to be understocked. Elsewhere the bugbear of foreign and American competition is beginning to be more calmly regarded, the recent awakening of our manufacturers to the real losses they had sustained having stimulated them to the introduction of improved patterns and lower prices, by which they have recovered much of the lost ground. At home the markets are all so utterly bare of reserve stocks in of the lost ground. At home the markets are all so utterly bare of reserve stocks in the hands of dealers and retailers, that there is an almost general belief that recuperative efforts must follow, and that purchasers will not fail to take advantage of the prevalent low prices for every kind of iron and steel and hardware products. As a proof that this has begun to come about, our attention is directed to the higher prices of tin plates, Scotch and Cleveland pig, steel rails and metals, all of which are certainly tin plates, Scotch and Cleveland pig, steel rails and metals, all of which are certainly dearer than they were a month ago. All these reasons combined certainly present a formidable basis whence to issue prophecies of coming good trade, and everybody must certainly desire that they may be verified by forthcoming events. As a proof of the hopeful feeling to which I have thus alluded, I may git the following extracts from a I may cite the following extracts from a circular issued last week by the well-known house of Shaw, Thompson & Co., London, who say:
"The severe and disastrous depression

which has long characterized the iron and steel trade, marking it out above all others as the greatest sufferer among the de-pressed staples of the country, shows clear signs of abatement. The treaty of Berlin, which is being honorably carried out, prom-ises European peace for some years at least, and thus a most serious cause of uncertainty and thus a most serious cause of uncertainty and disquietude is disappearing. Suspicions that foreign competition was seriously cripping so important an industry caused many misgivings, and had also a most serious effect. All these have been effectually dissipated. When wages had been so far reduced and machinery and invention so far utilized as to produce Bessemer steel rails at £4. 6/ per ton; good Middlesborough gray forge pig iron at 32/6 per ton; Scotch pig iron at 42/6 per ton; and ship-plate iron at £5. 5/ per ton, such fears were shown to be groundless. The financial embarrassments of foreign governments, which began in 1874, have been for about four years steadily undergoing amelioration, and some of the shattered schemes for railway and sanitary development are again coming some of the shattered schemes for railway and sanitary development are again coming to the front. The splendid harvests for some years in America have increased the fund of capital and revived confidence there, and although a rigorous protective tariff almost shuts out English iron at pres-ent, no one can doubt that when the neces-city for travetion in America is less onerous Dur English Letter.

ent, no one can doubt that when the necessity for taxation in America is less onerous, these duties will be reduced. These considerations have helped to inspire more confidence in the future of the iron and steel trade, and purchases have been made in large quantities by those who anticipate the further development of these causes of improvement. The spring opens with undoubtedly better prospects and a greater degree of confidence than we have had for some years. Capitalists could not invest in better property than iron at present prices.

better property than iron at present prices. Ptg Iron.—The annual production is now 6,500,000 tons, and the total stocks at present in Scotland, Middlesborough, Staffordshire and Wales do not exceed 1,200,000 tons, Tron Ore.—The activity in all kinds of Ores suitable for Bessemer Steel Iron continues. There is a growing eagerness among furnacemes to secure some standard Ores for future wants. There is a growing eagerness among furnacemes to secure some standard Ores of the fortune wants. There is a growing eagerness among furnacemes to secure some standard Ores for future wants. There is a growing eagerness among furnacemes to secure some standard Ores of the fortune wants. There is a growing eagerness among furnacemes to secure some standard Ores for future wants. There is a growing eagerness among furnacemes to secure some standard Ores quite independent, and strongly hint at an other advance in price, rather than make any concessions on the figures originally advertised at the opening of this season. The Ores mot sustable for Steel Irons have found little favor in the market with their Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of all ores and sold at ruinously low prices, are this season out of business. Prices of all Ores and sold at ruinously low prices, are this season out of business. Prices of a control of the demant is good of all ores are quoted the same as last week, excepting Hemantices, and these are not quited for the control of the Hemantice and the present.

Pig Iron.—The trade in Fig Metal duri practically out of the market. The price is nominally £4. 10/ B ton. Ship Plates and Angle Iron.—The prices of these have been drooping since the beginning of the year, until £5. 5/ for plate iron, and £4. 7/6 for angle iron were accepted. Ship building is dragging, and freights being so low hinders orders. Bar Iron.—There is more inquiry, and prices are so low and production so limited that the least increase of demand ited, that the least increase of demand would send up prices quickly."

SCOTCH PIG IRON has been steady, with a heavy amount of business doing. It would seem that the large stocks in hand have little effect in restraining operations, now that prices have reached the lowest level known for many Bulgaria, Roumania and Turkey the reports are similarly hopeful, while the shadow of British protection which has been thrown over Asia Minor, Cyprus, and to a certain extent Egypt, gives color and substance to the hope and expectation that the demand for British manufactures in those parts will shortly experience a most material enlargement. Already there are symptoms of the desired change, and several schemes are affoat for the development of the rich natural resources of what has hitherto been a neglected and almost waste corner of Europe, not to mention the wealthiest portion of Asia. Yet further, renewed and vigorous attention is being devoted to the important question of the opening up of Africa to our manufacturers, and there are in course of formation two or three trading companies, the object of which is to establish ports on to radiate commercial routes, and so to introduce British blessings to the benighted

only a small business being transacted from 44/3 @ 44/4½, cash, while to-day a moderate business has been done up to 44/6, cash, and 44/9, one month, closing sellers; buyers id. per ton less. The shipments last week were very heavy, the total being 13,910 tons, as against 6816 tons for the corresponding week of last year." We quote:

quote.	Tollerand Mary	100 m
~ m at	N	0. z. No. 3.
G. M. B., at Gla	gow	44/ 42/9
Gartsherrie,	* *** ******* ****	40/ 44/6
Coltness,		ex/6 4e/6
Summerice,		1616
Langloan	4	40/0 44/
		30/0 44/0
Carnbroe	*************	45/0 44/
Calder, at Port	Dundas	48/6 . 44/
Glengarnock, at	Ardrossan	46/6 43/6
Eglinton,	64	44/ . 43/
Dalmellington,	69	10, 13,
Shotts, at Leith	*******	43/
onous, at Leith		50/ 45/6
PORTHCOMING	PARLIAMENTARY	DISCUSSIONS

on the subject of free trade versus reciprocity, are looked forward to with much interest, especially that down on the agenda paper for April 29 against the name of Lord Bateman, who will call the attention of the House of Lords to the past and present operation of the free-trade policy of this country without reciprocity, and to its effects on home and colonial industries, as well as on our revenue and taxation. He will move: "I. That this house fully recognizes the benefits which would result to recognizes the benefits which would result to the community if a system of real free trade the community if a system of real free trade were universally adopted, but it is of opinion that it is expedient in all future commercial negotiations with other countries, to advocate the policy of reciprocity between all inter-trading nations. 2. That the long-continued depression of commercial and manufacturing and agricultural interests should form the subject of a full parliamentshould form the subject of a full parliamentary inquiry with regard to the causes, the best means of redressing and of counteracting the excessive tariffs levied by foreign nations against the produce and manufactures of this country." In the House of Commons, Mr. MacIver (of the Cunard Co.), M. P. for Brikenhead, will undertake the charge of similar resolutions. In both cases reciprocity will lose by large majorities.

about the reported success of Bolckow, Vaughan & Co.'s experiments in making steel from Cleveland ores, as to which you will doubtless notice various statements in sundry English newspapers. The new process is said to be analogous to that of Mr. Bessemer, and the company are so sanguine of its ultimate paying properties that they are stated to be in negotiation for the blast furnaces hitherto belonging to the estate of Thomas Vaughan & Co., which, if acquired, would bring up the number of their blast furnaces to 28, and make them the largest iron and steel producers in the world. So far, nevertheless, the published details appear to me to be rather meager. THERE IS MUCH TALK IN CLEVELAND

STEEL, MAKING IN NEW ZEALAND is a matter much talked of to-day, in con-sequence of the appearance of an aunounce-ment authorized by the New Zealand gov-ernment, offering certain premiums for the establishment of works in New Zealand capable of producing 100,000 tons of Bessemer steel rails from the native ores of that colony. It is pointed out that within the past eight years 15,500 tons of cast iron and past eight years 15,500 tons of cast iron and 93,000 tons of wrought iron, exclusive of iron for government and other railways, has been imported into New Zealand. The announcement says: "Written tenders will be received at Wellington by the Hon. the Minister for Public Works up to the 30th September, 1879, for the supply of the whole or any portion of 100,000 tons of steel rails to be manufactured within the colony whole or any portion of 100,000 tons of steel rails, to be manufactured within the colony from New Zealand ores. Payment will be made in cash on delivery at the works—the government of New Zealand agreeing to pay, in addition, one-half of the cost of conveyance to the colony by sea of the workmen to be engaged in the manufacture. Information as to the mineral resources of New Zealand, and maps indicating the various localities in which mineral deposits are situated in relation to means of transport, may be had on application to the Agent may be had on application to the Agent General of New Zealand, 7 Westminster Chambers, Victoria street, London; or to Mr. Walton W. Evans, 66½ Pine street, New York. As it is unlikely that intending contractors will enter into an engagement of the above nature without first satisfying themselves by personal inspection as to the position and extent of the raw material in New Zealand required for the manufacture of iron, every facility and information on this subject will be afforded on application to Dr. Hector, C. M. G., F. R. S., Director to Dr. Hector, C. M. G., F. R. S., Director of the Geological Department, Wellington." Here, this is believed to be "all very well" in its way, but it is very pertinently asked, Where is the coal to come from? We all know that there is plenty of fine ore in our antipodean colony, but more than one well-intended enterprise having for its object their utilization, has been baulked by this important quary. So far as I know there important query. So far as I know there is no suitable fuel in the colony, hence South Wales will probably be able to supply the rails much more cheaply than they can be made on the spot.

WILLIAM BROADHEAD,

the once notorious Sheffield trades union leader and wholesale murderer, died at that town yesterday, aged 60. He was fully exposed, in the most intrepid manner and in the face of the most diabolical threats, by Mr. Long, the editor of the Sheffield Daily

transaction has probably been completed. In hardwares there is a steady amount of business in hand. At Willenhall a large Russian order for locks has been secured. In gun-making circles great interest is being taken in the Parliamentary discussion which has arisen in connection with the alleged shipment of a quantity of guns to South Africa, presumably for the Zulus. The firm (Hutter) & Co.) named days their based. presumably for the Zulus. The firm (Hutton & Co.) named deny their knowledge of the destination of the rifles, but it is clear that they have been dispatched through a French agency to a quarter whence they will easily be conveyed into Zululand. This example of patriotism is bad enough, but it is worse to learn that in East London a number of Jews are working night and day in converting old Enfield rifles (recently sold at Weedon for 1/6 or 2/a barrel) into carbines for the use of King Cetewayo's braves. Several large consignments have already been sent off, but the break will probably now be put on, owing to the publicity the circumstance has attained.

PROM SHEPPIELD

the news of the period is depressing, every-body being better able to grumble than to do anything else. Neither iron nor steel is selling at all freely—indeed, all orders are reported to be small and payments most difreported to be small and payments most difficult to collect. In the cutlery branches much satisfaction is expressed at the tone of the reports sent from your side to the local press, stating that the demand for Sheffield knives of all kinds is visibly increasing, and that your manufacturers are quite unable to hold their ground against the imported goods, even with the powerful assistance of the tariff. The mayor of Sheffield—Mr. Ward, of Ward & Payne, the well-known sheep-shear manufacturers—has got into hot water with the trades unionists, by charging them with having been the means of driving them with having been the means of driving business away from the town. The union officials deny the accuracy of this statement, and challenge Mr. Ward to give chapter and verse in support of it. No doubt he will

The third annual report of William Jessoy Sons, Limited, steel manufacturers, is issued to-day, and, as it is a document of much interest to many of your readers, I give it entire, as well as the company's bal-

WILLIAM JESSOP & SONS, LIMITED.

In presenting the audited balance sheet showing the financial position of the com-pany at the end of the third year, your directors feel assured that, having regard to the continuance of the unprecedented long depression in the steel and other trades, you will be generally satisfied with the result of will be generally satisfied with the result of the year's working. The net balance avail-able for dividend, after paying interest on mortgage loan, &c., setting aside £600 in reduction of formation expenses, and dereduction of formation expenses, and deducting £4000 for depreciation on buildings and machinery, amounts to £11,694.5/11, from which it is proposed to pay a dividend of 5 per cent. on the amount of share capital called up, and to carry £163.15/11 to the next account. The Park and Soho works have not yet been disposed of. All the buildings, machinery and plant have during the year been maintained in an efficient state out of revenue. The prices attached to the stock lists have been approved by Mr. Edward Tozer, and the stocks of iron have been verified by him; the stocks at the principal depots in the United States have been verified by Mr. W. H. Weed, of New York. The reduction in the value of the stocks which the gift by Mr. Jessop enabled the directors to effect with ducting £4000 for depreciation on buildings Jessop enabled the directors to effect with-Jessop enabled the directors to enect with-out loss, and the efficiency of every depart-ment of the concern, will, your directors feel sure, enable them to secure for the shareholders the full benefit of any improvement in trade. The directors who retire by rotation are Messrs. Jessop, Wright Turner and J. W. Harrison, all of whom are eligible for re-election. The auditors, Messrs. Chadwicks, Collier & Co., also retire, and are eligible for re-election

ALFRED HILLS, Secretary.

The balance sheet for the year ending Dec. 31, 1878, shows as follows: CAPITAL AND LIABILITIES.

	CAPITAL A		1941	ALLEN A		-	
		£	8	. 0	l. £	В.	d
To subsc	ribed capital, hares, £50	384,350		0			
To capita	al called up, hares, £30	230,610		0			
Less	arrears	200	0	0	#20 4T		
To amor	ant received				230,410		'
in adva	nce of call				200,000		9 1
To sund	y creditors,				25,976	5 4	. 1
To reserv	ce from last				2,507	7	
accoun	t	374	10	3			
To gross	profit for the	26,804	11	6			
yem			-	-			
Less amo	unt charged	37,179					
for inte	rest, &c	10,884	15	10	16,294	5	1
					£480,127	**	91
	PROPERT	ar AME	A SHAN	merents.		.7	-
	PROPERT	£ AND		d.			d
By fresh	old and lease		10,	Cit.	-	104	
hold pr	operty, after ation to De-						
cember	. 1877	84,504		8			
Addit	ions in 1878.	200	0	_	84,704	14	8
locomo	inery, plant, tives,railway						
wago	n s, horses, c., after de-						
preciati	on to De-	669					
cember	ions in 1878.	79,668 8x9	14	5		_	
D41	channe me			_	80,488	8	5
terials	and loose						
Annie	dille roome				234,672	0	
tools							**
By form	ation ex-	8,000	0	0			
By form penses. Amou	ation ex-	-	0 0	0	7,200		.0

survived the crucial tests of the past two or three years are doing a moderately good business. Last week the foreign shipments included 1200 tons of steel rails from Dowlais for Otago, New Zealand; 390 tons from Bleenavon for the same colony; 630 tons of rails from Rhymney for Hummelvegen, and 180 tons of plates and bolts from W. Howard for Otago; from Newport 330 tons of iron went to Bolivia. At both ports the imports of iron ore are very heavy, Cardiff figures being 11,530 tons and Newport 5745 tons. The tin plate makers are well engaged, and are steadily upholding the late rise in prices. THE METAL MARKETS

have been characterized by encouraging firmness all round, but there does not appear to be any disposition to "plunge" yet. The usual weekly report of *The Ironmonger* runs as follows :

as follows:
"Copper has been steady at £55 for ordinary Chili bars on spot, and £56 for arrival; Wallarco at £64 @ £64. 10/; Burra, £63 @ £63. 10/; English tough, £60 @ £60 10/; selected, £61 @ £61. 10/; and strong sheets, £65 @ £66. A lot of 975 tons of Chilian regulus has sold at 10/6 per unit, and 350 tons of Cape ores by tender have realized about 10/5½ per unit for 29% per cent. produce. Flat bottoms rule at about £68; flat tiles for India (about 14 lbs.) £61; and Munte's yellow metal sheating, 6¼d. and Muntz's yellow metal sheating, 6\forall d. per lb. T'm has been firm at \(\pm\eta_6\)3, 10/\(\phi\)

£64 for fine foreign, and \(\pm\eta_6\)6 \(\phi\) \(\pm\eta_6\)7 10/ for English ingots. There have been imported here 5387 slabs in the Stentor from the Straits, and 5233 slabs from Amsterdam in the Benbow. Tin Plates remain un-changed at last week's rates, but manufacturers are quite firm, and are not willing to enter into forward engagements save at enter into forward engagements save at higher prices. Lead is somewhat dearer at £14 @ £14. 7/6 for English pig and £14 for soft Spanish without silver. W. B. is about £17. 10/ and L. B. £13. 17/6; sheet and bar, £14. 5/; pipe, £14. 15/; patent shot, £18. 10/; red, £17. 10/; white, £23. 10/; and genuine ground about £25. 10. Spelter is about £15 for ordinary brands; Oxidesinger, £6. 2/6. and Antimony. £46. Specter is about £15 for ordinary brands; Quicksilver, £6. 2/6; and Antimony, £46 @ £46. 10/. Zinc hassold by auction at £19. 5/for 40 tons, and £19. 7/6 for 50 tons.

The official report of the London Metal

Exchange was: Copper.—Steady at £56 for G. O. B. Chili bars, spot; fair business in specials and for arrival at from £56. 5/ @ specials and for arrival at from £56. 5/@ £57. 5/; Wallaroo, £64. 10/; Burra, £63. 10/; English tough, £60 @ £61; best selected, £61. 10/@ £62; strong sheets, £66. Tin.—Dearer; business in fine foreign at £65 @ £66; English ingots, £68 @ £69. Iron.—Scotch pigs, £44. 5/, cash. Lead.—Dearer; English pig, £14. 15/@ £15; soft Spanish, without silver, £14 12/6 @ £14. 15/. Spelter.—£14. 15/ for ordinary brands. Zinc.—No quotations. Quicksilver.—£6. 2/6. Antimony.—£46 @ £46. 10/.

FOREIGN.

(Moniteur des Interets Materiels,

(Moniteur des Interets Materiels.

Paris, March 16, 1870.—Metals.—A better feeling is spreading in business circles, and it is hoped that the spring campaign may still come up to expectations. Copper—Has been inactive: there has been a rise at Paris of 1.25 france in Ingots and Slabs. We quote to-day: First brands Chill Bars, deliverable at Havre, 150 francs the 100 kilos. Common ditto, 146.95; Ingots and Slabs. 150; Best Selected, 155; Corocoro Ore, 155; Sheathing, 180, and Yellow Metal ditto, 170. Havre has remained nominal; first brands Chill Bars at 146.95 (Bars 147.50, and Lota and Urmeneta, 143.75 (Bars 146.95); Best Selected, 155; Corocoro Ore, 155; Sheathing, 180, and Yellow Metal ditto, 170. Havre has remained nominal; first brands Chill Bars at 146.95 (Bars 147.50, and Lota and Urmeneta, 143.75 (Bars 147.50, and Yellow Metal Sheathing have risen to france the 100 kilos. They quote as follows: Small Refined Ingots, 160; Sheet Copper for Boilers, 177; Boiles, 187; Yellow Metal Sheathing, 175, and Copper Sheathing, 190. Tim—Is improving; there has been an advance at Paris of 5.50 francs in Banca, 5 in Billiton, and 2.50 in other sorts. We quote to-day: Banaca, 177.50; Billiton, 175; Straits and Australian, 172.50, and English at Havre or Rouen, 167.50. At Marseilles Banca has risen 2.50 francs, while English has declined 5 francs and Straits 2.50; they quote Banca, 170; Straits, 160; French, 165, and English, 167, 50. Lead.—There has been more doing in this metal, with an improvement of 1 franc in lots to be delivered at Havre, and 2.50 francs, deliverable at Havre, 41 sorts, 35 francs, 34; First Fusion Soft French commands 36 (B.50, 50 francs, 14, 50 francs, 15, 50 francs, 15, 50 francs, 16, 50 francs, 17, 50 francs, 18, 50 At 54, and at 53 in other brands; Old Remeited, 20, From—Architectural Iron, the dull season for which is now drawing to a close, is getting to be in better request, and Iron for planking is wanted. Makers of this line of goods are asking more money. One of the great makers in the Northern department has declined selling to arrive some Merchant Iron, deliverable here, at 147,52. And as for executing any further orders for Merchant Iron, deliverable at the works at 140 franes, five leading concerns have refused doing so. Whosoever wants any Iron, such as we have just described, will have to pay 145 @ 150 francs at present. Sheet Iron is also in improved demand. In the Haute Marne makers exhibit considerable firmness. Every article outside of hardware is wanted there. In the Rhone and Loire basin the rallroads begin to give orders. Here at Paris the favorable change which the Iron trade is undergoing in various parts of the country has not failed to exercise a hardening effect on prices. The following are the quotations in store: Coke Iron, 155 @ 160; Mixed, 100 @ 200; Puddle 230 @ 240. The arrivals of Pig Iron in the city of Paris in 1878 have been 21, 149 tons, against 25,883 in 1877, and of Special Iron 21, 200 tons, against 25,883 in 1877, Despite the exhibition there has therefore been a notable falling off in Merchant Iron last year, and goes to prove how dull business has been.

BELGION.

(Revue Universelle.)

quite slack, but it is expected that the spring demand will soon come forward, especially for architectural iron. Coal.—Stocks are fast accumulating at the mines leading to great weakness in

(Borsenhalle.)

Hamburg, March 15, 1879.—Iron.—Business in this branch is recovering slowly in Germany. Producers are in hopes of seeing duties reimposed on about the following basis: On Pig Iron, 6 @ 8 marks; on Bar Iron, 20 @ 35; on Castings, 20 @ 30; on Sheet Iron, 60 @ 80, and on machinery 40 @ 80 marks. The Committee on the Tariff seems to have determined that a duty is to be recommended of 50 pence per centweight on Pig Iron, of 1 mark per centweight on iron for rails, and of 1.50 mark on Bar Iron. Some blast furnaces are discharging a portion of their hands. Metals.—With the exception of Spelter, metals have been improving in response to the rise in England, Holland and France. The following is the present range: Copper.—At Berlin, English and Australian, 63 @ 67 marks the 50 kilos; Mansfeld, 66.50 @ 67; here. Drontheim, 60 @ 70; Lake, 76 @ 85; English, 65 @ 66; do., Sheating, 70.50 @ 71.50, and Yellow Metal do., 50 @ 60.—Tin.—At Berlin, Banca, 70 @ 70.50; and English, 66 @ 67; here, Banca, 60 @ 70. and English, 66 @ 71. Lead.—At Berlin, 14 @ 14.25; here, English Pig, 15.50 @ 16; Spanish, 18; German, 14.50 @ 15.23; English White Lead, 24 @ 29; Dutch do., 25 @ 79. Spelter.—Silesian at Berlin, 16.75 @ 17.30; at Breslau, common brands, to arrive, 15.55; W. H., 15.50, and Godulla 25.50; here, Silesian, spot and to arrive, 17.50; do., Sheet Zinc, 25.50; W. H., 15.50, and Godulla 25.50; here, Silesian, spot and to arrive, 17.50; do., Sheet Zinc, 25.50; W. H., 15.50, and Godulla 25.50; here, Silesian, spot and to arrive, 17.50; do., Sheet Zinc, 25.50; W. H., 15.50, and Godulla 25.50; here, Silesian, spot and to arrive, 17.50; do., Sheating, 24.50; zinc white, 23 @ 24; light gray, 25.50, and dark, 29.50.

AUSTRIA.

(Austrian Trade Journal.) VIENNA, March 12, 1879.—Fron.—There has been no improvement whatever in the general aspect here. There is a complete paralysis, both in Merchant Iron and manufactured goods, but it is hoped that the advent of spring and of the building season will infuse some life into business. Producers have assembled here, and have been endeavoring to agree on a common price list, but they have arrived at no result yet. The smaller producers seem to apprehend that their interests will not be duly considered, and are rather shy in adhering to the propositions thus far submitted to them. Machine shops and foundries have few orders on hand at present, and more active and prosperous times are very much needed. As soon as the new price list of Austrian ironmasters shall have been established, we shall resume our usual quotations.

HOLLAND. (Koch & Vlierboom.)

ROTERDAM. March 18, 1879.—Tim.—This metal has gone on improving under the impulse of an active demand. Thus Banca has, from 39, 25 guilders, risen to 42,75, and Billiton from 38, 30 to 42, 25 the 50 kilos. The auction to come off on the 25th inst. will consist of 23,300 slabs Banca. The following table, showing the course of prices since 1871, will be of more than usual interest now that prices are recovering:

Price of Banca Tin in Holland. Price of Banca Tin in Holland,

1872 1873 1874 1875 1876 1877 1878

Jan. 11.874 854 70 574 50 45 404

Feb. 1.86 87½ 70 5654 50½ 43½ 40

Mar. 1.85 84 62 54 50½ 43½ 40½

May 1...93 87 53 51½ 50 42½ 40½

May 1...95½ 80 58½ 50 45½ 42½ 30½

June 1...95½ 80 58½ 50 45½ 42½ 30½

July 1...94½ 83½ 60 50½ 46¼ 42½ 30½

July 1...94½ 83½ 60 50½ 46¼ 42½ 30½

Aug. 1...95 70½ 56½ 48¼ 44 41½ 30½

Sept. 1...93½ 70 57 51 43 40½ 37½

Oct. 1...94½ 74½ 56½ 52½ 42½ 40¼ 35½

Nev. 1...92 72½ 58 52½ 44½ 43 37½

Dec. 1...\$2 70½ 58½ 51 44½ 41½ 39

Lead.—A large business has been transace

Lead.—A large business has been transact and prices have been tending upward, Stolbe finalling being held at 8.87½ guilders.

CHINA. (Arnhold, Karberg & Co.)

Canton, Feb. 14, 1879.—Cool.—The market, although inactive, has been firm, especially for Cardiff, of which very small supplies are on the way, and as this description of Coal will be wanted later on for homew.—I bound tea steamers, prospects are in favor of a rise. Business for the fortnight has been confined to a sale of 1950 tons ex Godown at \$9.25. For Australian the demand is light, and transactions are comparatively small. Beside 1200 tons Duckensfield at \$8, 700 Kelung, to arrive, sold at \$5.50.

(Allken, Spence & Co.)

(Altken, Spence & Co.)

Colombo, Ceylon, Feb. 20. 1870.—Plumbago continues in good demand for the United States, but dealers keep back supplies, and by combining have managed to force up prices. The article is scare, and extreme prices are now asked for prime qualities. Shipments to the United States since Oct. 1, 1878: 20,936 cwts.; to the United Kingdom, 9687; and to Australia, 112; together, 30,785 cwts., against 22,219 in 1878; 51,021 in 1877, and 45,491 in 1876. Exchange, 1/8/4.

Singapore, February 15, 1879.—Tis.—The demand for the United States having become less active, and the London market having rather receded, prices here gave way to \$19,37½ @ \$19,32½ per picul, and about 200 tons were settled for New York. There are still buyers for that market at the latter quotation. The shipments to the United States during the past fortnight have been 25 tons by steamers via London, and we believe there have been about 413 tons shipped from Penang, but we have not yet received particulars. The steamer Cyphrenes, expected next week, has engaged about 200 tons. Tonnage.—There has not been any change during the past fortnight; the demand is not extensive and the supply of disengaged vessels is moderate; for New York there is little cargo offering. The Glenlyon took 1244 piculs. Exchange has declined to 3/8 for e months' sight credit drafts on London.

(Dummler & Co.) (Gilfillan, Wood & Co.)

(Dummler & Co.)

(Dummler & Co.)

BATAVIA (Java), Feb. 8, 1879.—Tin..—The auctions of Billiton Tin in 1878 have been: Feb. 11, at 41.51; April 8, at 41.54; June 12, at 41.24; Aug. 14, at 40.79; Oct. 14, at 39.96; and Dec. 9, at 41.67; to gether, 62.975 piculs. During 1879 the sales are to consist of 12,000 piculs every alternate month, the first of which will take place on the 10th inst. Coal.—Having throughout the year been in ample supply, lower prices had to be accepted, and no transactions have taken place since. Freights having since considerably risen, however, 25 guilders would be obtained now for Cardiff Coal. Exchange, 11.92½ @ 11.95. ige, 11.92% @ 11.93.

INDUSTRIAL ITEMS.

MAINE.

The Katahdin Furnace—the only one in this State—is out of blast by reason of an explosion of gas. It will blow in in May. MASSACHUSETTS.

The Worcester Machine Screw Company have just filled a large order for export.

All the industrial establishments of Weir Village have been for some time at work on full time, with their usual complement of employees. The Taunton Copper Works, the largest of the number, which have not the largest of the number, which have not ceased running, except temporarily for repairs, have a force of over 50 hands employed; the Taunton Iron Works have 75 hands in the manufacture of ranges and stoves; Oscar G. Thomas, iron plows and stoves, some 30 hands; the Union Furnace Company, stoves, &c., about 40; Baker & Co's new stove works stoves; Oscar G. Thomas, iron plows and stoves, some 30 hands; the Union Furnace Company, stoves, &c., about 40; Baker & Co.'s new stove works, some 20 employed.

Joseph Wright, formerly of the Union Furnace, is about erecting a new foundry for the manufacture of stoves, &c., probably near the Old Colony Weir freight station.

Besides the above copper and iron manufactories, there are the Phenix (crucible) Manufacturing Works, with 20 hands, the Taunton Crucible Works, 15 hands. In ad-Taunton Crucible Works, 15 hands. In addition to these, Sproat's steam mill, manufacturing boxes, nail kegs, &c., with its 30 hands; Presbrey Stove Lining Works, J. R. Williams Stove Lining Manufactory, Taunton (Parker's) Stove Lining Company, also French & Winslow's Stove Lining Works, all employing nearly 100 hands, all at work, and many of them crowded with orders.—

Commercial Bulletin.

A company is being organized at Ansonia, Conn., on the basis of \$100,000 capital, for the manufacture of silver-plated ware. We understand that Mr. E. L. Brittin is at the head of the enterprise.

NEW YORK.

It is stated that the Fullerville Furnace, at Fullerville, St. Lawrence County, will go into blast in the spring.

It is stated that the Alpine Furnacel at Antwerp and the Sterlingville Furnaces in Jefferson County have been abandoned.

Both of the Onondago Furnaces are out of blast. But one has been in for some time, and

It is stated that the Fullerville Furnace at

the lining of this was so badly burned away that it became necessary to blow it out. No. 2 will be repaired at once. Some radical changes will be made so as to increase its

changes will be made so as to increase its capacity to 350 tons per week.

The Pittsburgh Furnace has just blown in.
The Cedar Point Blast Furnace, at Port Henry, is now working off 50 tons of Bessemer pig iron per day. The Bay State Iron Company at the same place are about to begin the manufacture of Bessemer iron at their blast furnace. More iron ore has been shipped by rail the past winter from Port Henry than in any previous one since the Champlain division was built. Work in the Champlain division was built. Work in the mines is being driven with an increanumber of miners this month. The roof of Mine 21 will be blasted next week. It con-

NEW JERSEY.

tains about 20,000 tons of ore.

The Passaic Rolling Mill Company have received another large contract, which will occupy the works to the fullest capacity for three or four months, besides giving emplement to a large number of men outside. is for the taking down of nearly the whole of the original elevated railroad in Green-which street, New York, and rebuilding it with larger and stronger ironwork. This contract will require about 3000 tons of finished iron. Work has not been begun yet, but the mills are fully occupied with other work keeping about 500 men engaged. The puddling and rolling mills are running full, double turn.

PENNSYLVANIA

The P. & R. shops, Pottsville, are already working, and at the same time being placed in condition to do different kinds of repairing. About 84 men are employed. The work principally being done is the repairing of mining machinery. The car shops are not yet in working order. It is probable that when the different branches of work are in full operation it will be found necessary to erect either a new or an addition to the old

erect either a new or an addition to the old blacksmith shop, and also a boiler shop. The P. & R. rail mill, Reading, is quite busy turning out large quantities of railroad iron. Much of it is shipped to tide-water, whence it is sent South, to be used on southern lines that are receiving new rails and being improved generally.

One of the Coleraine Furnaces, at Reding-ton, Northampton County, is in blast and the

other is preparing to blow in.

All five of the furnaces of the Bethlehem
Iron Co. is in blast. All of the iron made

goes into steel at their own works.

The Mt. Hope Furnace was not in blast in 1878, but has been running since Jan. 1, making 40 tons of pig per week. Improvements recently made will enable it to turn out a larger product.

The Forest (C. C.) Furnace is out of blast

The Forest (C. C.) Furnace is out of blast, and will probably not be lighted again.

The furnace at Tofton will blow in shortly.

"Tubal Cain," in the Sharon Herald, says: "For the week ending March 21, at the Atlantic Mill, Kimberly, Carnes & Co., puddle, bar, guide and both hoop mills double turn; the nail plate mill and nail factory were the only branches that were slack, and their slackness was by reason of some of the steam boilers being repaired. Both hoop mills co on on orders for the Stand-Both hoop mills co on on Both hoop mills go on on orders for the Standard Oil Co. Monday of the present week.

The 8-inch mill made 50 boxes of hoops for California last week; each box contains from 1700 pounds to one ton, according to the news is good or bad, as one may happen to look at it. The lining of the Etna furnace No. I caved in last Friday, which will necessitate a shovel out or a blow out; the Red Jacket is running and doing well; the Clara will likely go in this week; the Etna and sheat mill both have their hands full; hereafter they will pay cash at these works. From Sharpsville: All three of the ins doing

as well as could be expected.

The Harrisburg Company have received several large contracts for cars—one from the Central Railroad of N. J. for 1000 coal the Central Railroad of N. J. for 1000 coal cars, and another from the Canada Southern Railroad for 600 box cars. Upward of 500 men are employed in these shops. This company is now turning out ten coal and box cars per day.

PITTSBURGH AND VICINITY.

Thomas Wightman & Co., glass manufac-turers, who own two window-glass and two only been running one window-glass and one bottle factory, commenced work at the other window-glass factory this week, and are making preparations to start the bottle house in a few days. bottle factories, but for some time past have n a few days.

Zug & Co.'s mill started double turn last

week in all but nail mill.

The Union Iron Mills, Carnegie Bros. & Co., are running double in all departments.

Clinton Iron Works, Graff, Bennett & Co., are running double, as are also the works of

lar iron girders, weighing about 1800 lbs.
each, made of plate and angle iron, and
wrought iron tubes, riveted in sections of
about 20 feet each, making one of the finest
samples of rivet work to be seen in the
country. The work is to be finished by
April 12. The pier is to be 660 feet in
length, with a roadway of 25 feet, widened
at three points to 50 feet, with room for
buildings for various purposes.

D. W. Carroll & Co. are estimating for
a large iron boat to run on Peruvian waters.

MARYLAND.

MARYLAND.

The Cedar Point, Chesapeake and Muirkirk furnaces, now out of blast, will probably blow in the first week in April.

The market in Maryland is virtually bare

of iron, in consequence of the stoppage of furnaces for want of wood. Most of the furnaces that will blow in this month have orders to run for some time.

There are but three furnaces in the State in blast.

in blast.

The rolling mill at Cumberland is running steadily, but employing only about half of its force. They are putting down a new plate mill, which will be in readiness for operations in the near future. The mines of this vicinity are starting up. Notice has been given by the Chesapeake and Ohio Canal Company to their boatmen to get ready for business, as the water will be turned on shortly.

The Ferrol Furnace is out of blast by eason of an accident to its hot blast.

The Callie Furnace is constructing a branch railroad from the furnace to the Cleveland and Ohio Railroad. When finished, this furnace will blow in.

NORTH CAROLINA.

Every furnace in this State is out of blast. OHIO.

One stack of the Hubbard furnaces at Youngstown will blow in in a few days. The Falcon Furnace of Brown, Bonnell & Co., at Youngstown, will blow in this week.
The stocks of iron in the Mahoning Valley

are very light at present.

The XX Furnace at Newark, belonging to the Newark Coal and Iron Company, is in the hands of a receiver.

Lawrence and Vernon furnaces are preparing for blowing in.
The Youngstown Rolling Mill Company

are now making many improvements in their mill. A new train of 12-inch rolls is being put in, also a heating furnace and blast pipes have just been attached to all the furnaces in the mill.

furnaces in the mill.

The Pomeroy Rolling Mill, which has been idle for some time, is to be sold at an early day to satisfy the mortgages on it.

Reed & Sons' stove works, at Warren, commenced work Monday, March 24, with 27 men. They make chiefly the Richwood Cook Stove.

Cook Stove.

The Etna Furnaces, Ironton, it is reported, have succeeded in effecting a compromise, and will put one stack in blast in

fay.

The Grant & Buckham Furnace will blow

in June 1. The Keystone, Monroe and Mount Vernon, April 11. The Bloom will remain

We learn that the assignee of the Cherry Valley Iron Co. has discharged all of the coal miners, and the furnace will blow out in about 10 days.

WISCONSIN.

The Minerva Furnace, Milwaukee, will blow in April 1, making three in blast at that point. It will be run by the North Chicago Rolling Mill Co., and will have a capacity of 360 tons per week.

The Iron Ridge Furnace is preparing to blow in

blow in.

There are three charcoal furnaces in this State in blast—one Appleton, one Fox River and one National. The stocks of pig are very light.

The Richland Furnace is to be wrecked.

Both of the Missouri Furnaces and one of the South St. Louis Furnaces are in blast, making iron for the Joliet Iron and Steel Company.

There is but one charcoal furnace in Mis-

souri in blast—the Petal Knob—which is blowing to use up stock that has been on hand several years.

The Scotia Furnace is being repaired, and will blow in some time this month.

The Ozark Furnace is in possession of bondholders. It will not blow in this year. The Midland Furnace is repairing, and will be in blast about May I. The Hamilton and Maramec furnaces will

INDIANA.

probably never run again.

The La Fayette Furnace at Brazil has been dismantled.

ILLINOIS.

A letter from Belleville, of March 15, says: "The Belleville Nail Works have resumed full operations, with an important improvement in the production of nail plate, which reduces its cost materially. This company are pushing ahead energetically, having contracts that will cover their full production up to July 1, 1879."

The Joliet Iron and Steel Works have Saished their resume and improvements and

finished their repairs and improvements, and are hard at work again.

The Chicago, Rock Island and Pacific Railroad Company have in course of construction, at their shops in Chicago, eighteen

new locomotives, of which six are 4-ton freight, six passenger, and six pony en-

KENTUCKY.

The Norton Furnace is just ready to go

The Bellefont, Hunnewell and Ashland furnaces are at present the only ones in blast in the Hanging Rock region of Ken-tucky. The Mt. Savage and Charlotte will blow in this summer.

Firth's Best English Cast steel.

FAMILY

GRINDSTONE. Horse Nai



perfected our GRINDSTONE for family use, and offer it to the public with a FULL GUARANTEE that it is a perfect machine; and also that it will please It is a perfect machine; and also that it will please every one who buys it. So far as we know, it is the first Foot-Power Machine which has been fully adapted to the wants of families for household work and of mechanics for grinding small tools. The stone is of the best quality, and runs perfectly true. It is 8 inches in diameter, 1½ inches thick, and made at the Huron Quarries expressly for this use.

The EMERY WHEEL is the same size as the The EMERY WHEEL is the same size as the Stone, and double coated on the side and rim with best Wellington Mills Emery. When not in use, it is taken off and lad aside. A sponge is fastened in the side of the trough, to keep the Stone from throwing water when running at a high speed.

The Machine is run with a clutch, so that there

can be no dead centers; but when the foot touche the treadle it starts off in the right direction, and uns at a very high or very low rate of speed, as desired. For grinding Carving Knives and all light tools, and for polishing Cutlery, this Machine is perfect. The legs are made to fold up for shipping, so as to occupy a small space. Weight, 26 pounds. Price, including box, \$3. It is for sale in MOST HARDWARE STORES in the country at our price, with a reasonable amount added fo

MILLERS FALLS CO..

74 Chambers Street, New York.

BAILEY WRINGING MACHINE CO.,

No. 99 Chambers Street, New York.





SPECIAL QUOTATIONS ON THE ABOVE GOODS FOR EXPORT. Send for Illustrated Price List and Discount Sheet.



American and French

MOVELTY

Brass Hooks for Jewelers' Cases, Zinc and Iron Hinges, Turn Buttons, Thumb Springs, Book Clasps, and Fancy Metal Work of all kinds.

OFFICE AND WORKS: Nos. 63 & 65 Elizabeth Street, New York. Lubricating Axles, ratent

MADE OF BEST REFINED IRON AND FULLY WARRANTED. Price no Higher than other First-class Axles.



No more Hot Boxes.

Requires only half the Greasing. Will Last Longer than any other Axle in the Market.

Manufactured only by F. W. WURSTER,

Successor to C. H. HENRY & CO.,
Brooklyn (E. D.), N. Y.

LANE'S MEASURING FAUCET.

Price, \$3.00.

For Light or Heavy Molasses, Oils, Varnishes or other Fluids.



LANE BROTHERS, Millbrook, N. Y. EUREKA FIRE HOSE CO.,

E. General Agency, GRAHAM & HAINES, 113 Chambers St., New York

NATIONAL

FINISHED

[BRIGHT OR BLUED]



These nails are made of the best brands of NOH -WAY IRON, and are guaranteed to be equal to any in the market.

NATIONAL HORSE NAIL CO., VERCENNES, VT

DURRIE & CO., Agents, No. 97 Chambers St., New York

We desire to call the attention of the trade to

Furnace by our patent process, which produces a nail having all the requisites for a

nail are, that the point should be sharp, the shank stiff, to drive without crippling under the hammer, corr enough to clinch readily, while sufficiently tough to avoid all danger from the "drawing the clinch" or breaking the neck under the head.

These properties we claim for the

"ANVIL HORSE NAILS."

In the process of manufacture the metal is com pressed under the head, which gives the nail great strength where it is required (between the shoe and hoof), and the cold rolling gives it a stiffness attained in no other way, while the quality of the metal used insures a clinch and point unsed by any nail ever offered in the market Samples and prices sent on application

ANVIL NAIL CO.,

A. F. PIKE,

East Haverhill, - New Hampshire,

Manufacturer and Wholesale Dealer in Scythe, Axe, Knife and Hacker

STONES

ILLE, OND GRIT, WHION, WHITE MOUNTAIN,
PREMIUM,
GREEN MOUNTAIN,
MOWING MACHINE,
RAGG,
Stones gotten up and labeled in
any style desired.
Price and Grey





Spofford's Patent Bit Brace,

Manufactured by

FRAY & PIGG,

U. S. A. Bridgeport, Connecticut, , All Iron, Four Sizes. Rosewood Head and Handlet No. 7...7-inch sweep. No. 107...7-inch sweep. No. 108...8 No. 108...8 No. 108...8 No. 108...8 No. 108...8 No. 118...15 No. 118...15 No. 118...15 No. 118...15 No. 118...15

CORRUGATED AND CRIMPED IRON



MOSELEY IRON BRIDGE AND ROOF CO., 5 Dey Street, New York.

INEN HOSE

Steel Horse Shoe Nails,

made from metal prepared in the Martin-Siemen

PERFECT HORSE SHOE NAIL.

The well-known desirable properties of a perfect

65, 67 and 69 Washington St., New York

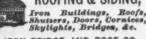
ne OLD RELIABLE, N POND (Red Ends),



The "Ramsay Improved Steam Winder,"
Manufactured by H. A. RAMSAY & CO.,



ROOFING & SIDING,



13 Barolay Street, New York.

MARCH 23, 1869 REISSUED 1870.



MOVEMBER 10, 1863, FEBRUARY 23, 1864, REISSUED JUNE 1, 1869, IMPROVED AUG. 1, 1877.

The back thrust when in use borne by the SHANK instead of the Hand'e. None genuine unless stamped "L. COBS & CO."

Worcester, MASS.

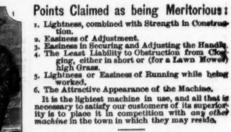
Warehouse, 97 Chambers St., & 81 Reade St., N. Y. HORACE DURRIE & CO., Sole Agents.



The 1879 Pennsylvania Lawn Mower.

LIGHT DRAFT AND EASILY ADJUSTED.

Every Machine Warranted to Work as Represented.



	Style.	CELL	91.	
Width of Cutter. 10 inch. 12 ''	Driving Wheels. 8 inch. 8 "		Weight. 30½ lbs. 33½ 36	Prio \$14.0

NEW MACHINES.

15 inch, 10% inch Driving Wheels, 6% inch Cylinder, Man Size, 48 lbs. 421.00 17 inch, 10% inch Driving Wheels, 6% inch Cylinder, Man Size, 51 lbs. 24.00

FOR SALE BY

HAMILTON & MATHEWS, Rochester, N. Y. SIMMONS HARDWARE CO., St. Louis, Mo. MARKLY, ALLING & CO., Chicago, III. DUCHARME, FLETCHER & CO., Detroit, Mich.

S. BACKUS,



uality and finish, from the cheapest Farmer ose-wood handles and lignum vita heads, be country, and which for simplicity of constr tiets furnished upon application at office and

No. 102 Chambers Street, NEW YORK.

American Stoves for Foreign Markets

Extracts from Letters of U. S. Consuls and Commercial Agents.

FRANCE. Freight, New York to Havre, \$10 per ton of 40 cubic feet.

Rordeaux.—From Mr. L. A. Price: The article you manufacture cannot be exported from the United States into France, no commercial treaty existing between the two countries. Stoves, ranges, &c., are classed "prohibited" in the French Customs Tariff. "prohibited" in the French Customs Tariff. Bearing this in mind, and in view that a commercial treaty may, at some future period, be concluded. I give you the following in reply to your questions: American stoves are not used in this city or department. Stoves are not generally used in this city or district; cooking ranges manufactured here are used to a certain extent, mostly in hotels and restaurants. Cooking and heating generally is done in chimneys: and heating generally is done in chimneys; lately gas-ranges have been introduced, and are employed in a few private dwellings. Wood, charcoal and pit-coal is the fuel employed. Higher prices would not prevent sales of American stoves if it could be clearly demonstrated that they were more economical in consumption of fuel, more durable and convenient. The possibility of creating a market for the stoves manufactured in the a market for the stoves manufactured in the United States undoubtedly exists; perhaps much time is necessary to accomplish this. The people here, as a general rule, are not easily induced to accept innovations, and only time and the demonstrated excellence on superiority of an article bring it into general use. The trade you are interested in can, in my opinion, be encouraged only by establishing an agency. Naturally, this cannot be done at present, for reasens already given

ready given.

Lyons.—Mr. Benj. F. Peixotto, Consul, handed Mr. Sard's letter to M. A. Dufour (Croix Rousse, Lyons). This latter gentleman states: "No American stoves, to my knowledge, have been used in France. We use primitive stoves, constructed without regard to beauty or economy of fuel; and my opinion is that economical and wellmy opinion is that economical and well-finished stoves would meet with great success here. Stoves here are manufactured principally in the North and in the Ardennes. The fuel employed is generally oil or coke, except in the elevated districts, where wood is relatively cheaper than oil. The higher prices of these stoves would be no obstacle to their sale if they were really economical, more convenient and better constructed. In France we are excessively conservative. more convenient and better constructed. In France we are excessively conservative. You have no idea of the difficulty of introducing anything good, if new. You must deal directly with the public. Have an agency at Lyons, managed by a man devoted to your interests and capable of showing the merits of your goods, and let him push them in the surrounding towns, having Lyons for headquarters. This mode of proceeding is expensive and requires considerable investment; but at the end of a few months' sacrifice, the benefits derived will amply compensate you for your trouble.

SWITZERLAND.

Geneva. - Mr. J. Eglinton Montgomery "American stoves have been introduced in this city; are being used more and more as they become known, and are very highly regarded. The stoves are manufactured by Spear & Co., in Philadel-phia, and I believe are known as base-burners and "Silver Moon." The cooking or heating apparatus is invariably furnished or heating apparatus is invariably furnished by the tenant, the owner only introducing a porcelain stove and fire-places. The fuel in common use is a very inferior coke, but in the open chimneys or fire-places and porcelain stoves, wood is always used. There is a very trifling federal tax upon stoves, but this is insufficient to operate against their introduction. A very excellent trade can be developed by simply demonstrating the superior utility and economy of the article or articles recommended. The Swiss are an exceptionally prudent people, and will not embark in any enterprise without positive proof of its being advantageous to their interests. The goods must be seen and the prices must be goods must be seen and the prices must be known before they will ever undertake the development of trade. An illustration of this can be readily had in the successful introduction and use of a stove made in Dublin, Ireland. A few years ago an attempt was made to induce persons residing here to try the stove. Every effort to per-suade them that it would be to their interest to do so failed, until the manufacturer sent one here as a sample, at his own expense, and the result has been a most wonderful demand for the stove.

Upon the introduction of our American

Upon the introduction of our American anthracite coal, which is now being consummated, I have not the least doubt that every description of stove now manufactured in the United States will sooner or later find a profitable market in Switzerland. Messrs. James T. Bates & Co., No. 1 Rue du Rhone, are about opening an establishment for the exposition and sale of all descriptions of American goods and wares descriptions of American goods and wares, by sample, and I am sure could be of great by sample, and I am sure could be of great service to you. Geneva Merchants.—T. Sirdet, 29 Quai de Bergues; Carteret & Co., 36 Croix d'or; Dumont fils, Chemin des Chevoises; D. Butin, Tour de Pile, I; R. Hufschmidt, 18 Quai Mont Blanc; Dupont & Buche, Quai de Rive, 6; Paccard & Bitenes, 25 Chautepoulet; J. A. Recordon, Boul. St, Gervais.

Zurich .- Mr. S. H. M. Byers says : American stoves are not used here at all, nor do I believe they could be successfully intreduced. The stoves here are always a part of the house, and are arranged for great saving of fuel.

ITALY. Florence.—From Mr. J. Schuyler Crosby:
No American stoves have been introduced
yet into this city. The stoves most in use
are manufactured in France and Germany,
and for the most part are for kitchen purpossy. The cooking or heating apparatus generally is not a permanent fixture in each dwelling. Thel used is bituminous coal, or charcoal and wood, Government daties upon stoves are the same as on materials of which they are made, averaging 10 per cent.

A higher price on American stoves, as com-pared with French and German stoves, would, most probably, prevent sales, al-though it might be demonstrated that they

would, most probably, prevent sales, although it might be demonstrated that they are more economical in consumption of fuel, more durable and convenient. In my opinion American stove manufacturers will receive little inducement for trade. I would mention the name of Messrs. Eyre & Huntington, American bankers, who besides being responsible, would take an interest in the development of American trade; and among Italian firms I would refer you to C. Malenchini & Co., 33 Via Cavour, and S. Pisa, 8 Via Condotta.

Genoa.—Mr. J. F. Hazelton writes: American stoves have not been used at all in this city and country. No cook stoves are used here. The bread, pastry, &c., are made by bakers who sell to retail dealers. The only kind of stoves in use here are small heaters, made of sheet iron, about 3 feet high, round, and about 18 inches in diameter. The pipe is about 2½ inches. Very few of these are used. The rooms are warmed generally by grates in open fireplaces. The cooking and heating apparatus is generally a permanent fixture in each dwelling. The fuel used for cooking in private families is charcoal; for heating, coke is mixed with wood or charcoal. English coal is not used to any extent, except private families is charcoal; for heating, coke is mixed with wood or charcoal. English coal is not used to any extent, except for smelting purposes. Efforts are being made to introduce American anthracite coal into this country with some success. There is no demand for it, however, and so far it has been used by parties, after persuasion, to test its qualities. The price of fuel is high at this place. The duty on iron is 80 cents per 100 lbs. I find no duty on stoves as such. I think that a few American stoves of the smaller sizes could be sold here. At Turin, Milan and Florence, where it is colder, the sales could be made more easily than here. I do not think that American stove manufacturers can that American stove manufacturers can create a demand for cook stoves in this create a demand for cook stoves in this locality. The sale of the heaters would increase, I think, as people became accustomed to them and understood their real value. The best way, it seems to me, to introduce American stoves would be to send a number to one or more of the hardware dealers in the cities of Northern Italy, with instructions to sell them at low prices until people had given them a trial. One of the Pennsylvania coal companies have an agent Pennsylvania coal companies have an agent now traveling through Italy testing Ameri-can coal and laboring to create a demand for it. If the stove interest could co-oper-ate with the coal interest it would be ad-vantageous to both I should think. The fol-Vantageous to both I should think. The fol-lowing are said to be reliable dealers in hard-ware in Genoa, viz.: Salis Bosch, Tencone Sgnazio & Co., via San Lorenzo, No. 6.

SPAIN.

Cadiz—Mr. Anto. A. Pirra, in charge of the United States Consulate during the ab-sence of General Duffie, consul, states: Stoves are very rarely used here, the weather being warm. Only a few wealthy families use French chimneys. The cook-ing apparatus in each house is a permanent fixture. The fuel employed is charooal; the duty charged is on the weight: and the fixture. The fuel employed is chargoal; the duty charged is on the weight; and the only way to introduce your articles into Spain is by applying to the following respectable firms in this locality: Bazar Gaditano, Bazar Inglés, Mr. Thomas Haynes, Messrs. Herrero Hermanos.

SYRIA. Mr. J. T. Edgar says: No American stoves, and very few stoves of any kind are used here. A few Blodgett's baking ovens are employed. Cooking apparatus a per-manent fixture. Natives use charcoal in a brazier; a few French open fire-places, used by Americans and Europeans; also, a few Glasgow stoves, and Italian terra cotta fire-places. The fuel is charcoal and wood. Customs duty 8 per cent. A higher price would not prevent the sale of American stoves if their superiority could be demonstrated. There is not an American merchant in Beirut. Petroleum is the only article imported from America. One and a quarter millions imported this year. Beirut retail price about 20 cents per gallon. Market overstocked. Wood and charcoal very costly, and increasing in price as wood becomes scarce. Trade of all kinds has been much depressed for many years. I do not see yet how American manufactures can be successfully and permanently introduced. Manchester goods, made especially for this market, are imported to a very large extent.

The Melbourne Exhibition.—A formal invitation has been extended to the United States to take part in the Australian International Exhibition, which will open at Melbourne on the first day of October, 1880, and continue until the 31st of March, 1881. A number of American merchants who are interested in Australian trade, are endeavor-ing to have an official exhibit made there of American manufactures and products, and the matter will shortly be brought to the at-tention of Congress.

GREAT REDUCTION IN PRICES.

CLIMAX REFRIGERATOR

And Water Cooler Combined. Patented Dec. 2, 1873, June 1, 1875.

No Drip Pan to Soil the Carpet. Self-purifying, Cold, dry and pure air. Inner case made entirely of Galvanized Iron. Send for catalogue and reduced price list. R. ARMIGER & SON, Manufacturers, 22 Second Street, Baltimore, Md.

HUGH W. ADAMS. IRON MERCHANT.

56 Pine Street, - - New York City.

MANUFACTURED & SCRAP IRON.

MANUFACTURERS' AGENTS FOR

Boiler Plate Iron, Wrought Iron Beams AND OTHER SHAPES.

CHARCOAL PIG IRON, ANTHRACITE PIG IRON.
Orders solicited.

ALWAYS ASK FOR



THE MOST POPULAR PENS IN USE. For Sale by all Stationers. ESTERBROOK STEEL PEN CO., Works, Camden, N. J. New York.

RIDGEPORT.C

ARMSTRONG'S Stock

For Pipe and Bolts,

Have the following advantages:

fittings.

2d.—The Armstrong Dies, by reason of their peculiar cutting edge, can be worked with much less labor, and accomplish the desired results in less time, than with the solid 3d .- The Armstrong Dies have a double taper that is, the taper at the entrance for

3d.—The Armstrong Dies have a double taper that is, the taper at the entrance for the first few threads is greater in degree than the standard taper, which forms a lead to the Dies, causing them to start on the pipe without filing, even when there is a swell or burr, and requiring no pressure whatever to start the Dies on the pipe.

4th.—The Armstrong Dies being made in two parts instead of one (as in the solid Die), can be more perfectly constructed; the cutting edges reached more directly; the work done with greater precision and uniformity, by which they accomplish a much better result.

5th .- The Armstrong Dies can be sharpened without drawing the temper, and can be kept in good condition easier and with less expense than any other Dies ever offered to the public. A mechanic can sharpen these Dies, and is not obliged to send them to the manufacturer, as is the case with solid Dies when they become dull.

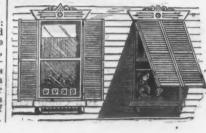
6th.—The Armstrong Dies are interchangeable in the stock, and although adjustable, do not need adjusting to cut the standard size for which the dies are made. The adjust-

ing is only done when the irregularity or variations in the fittings make it necessary. There are corresponding marks (\$\frac{1}{2}\$) on the Stock and on the Dies (\$\frac{1}{2}\$) and when these marks are brought into line the Dies will cut the standard size.

For sale by leading dealers in Hardware and Steam and Gas Fitters' Tools. For further particulars address,

F. ARMSTRONG, Bridgeport, Conn.

Dearborn's Pat. Adjustable Blind Awning Fixtures.



Either old or new Blinds thus fitted can be opened in the usual way or used as an awning at pleasure.

For particulars address the sole manufac

BOSTON BLOWER CO.,

Boston, Mass.

Jarvis Furnace

A. F. UPTON, Agent,

48 Congress Street.

Boston, March 10, 1879.

We call the attention of steam users to the following report, showing the lowest of raising water per 1,000,000 gallons, in any city in the United States.

Report of the Water Commissioners of the City of Binghamton, N Y.

BINGHAMTON, January 1, 1879.

To the Honorable the Mayor and Common Council of the City of Binghamton:

GENTLEMEN: We herewith submit to you our annual report for the year ending December 21, 8, with detailed statements by our Secretary and Superintendent, showing our receipts and bursements, with such other information as will show you the condition of this denature.

r total receipts for the year have been:	DISBURSEMENTS,
ater rents and frontage \$24,046.96 terest, old material, &c 633,99 y Treasurer 11,315.00 sh on January 1, 1878 15,085.21	Bonds due August 8, 1878
Total\$52,571.16	Total

Of this amount, \$10,000 is drawing 5 per cent. interest. Eight thousand dollars of this can be used to pay on the bonds and interest next falling due,

Bonds payable August 1, 1879	\$4,500.00 14,000.00
Total	\$18,500.00

Leaving a balance of \$10,500 to be raised in the next city budget.

Early in the year we reset one of our boilers with a Jurvis Furnace and Grates for burning coal dust or screenings from the coal breakers. This has proved very satisfactory and a great saving in fuel, as one ton of dust, with this arrangement, makes nearly as much steam as a ton of the best coal, at less than one-half the cost.

We are now burning an average of only one and a half tons of dust in 24 hours, costing, delivered at the works, \$1.50 per ton, or at the rate of \$2.25 for 24 hours.

With this we are pumping about 1,335,407 gallons daily, under a water pressure of 45 pounds during the day, and a lower pressure after 10 o'clock at night. To show the reduction of pumping expenses, we give below the cost for fuel for three days in December of each of the four preceding years.

December,	x875	\$16.52 December,	1877	\$13.84
December,	x876	18.08 December,		6.99

During the year we have laid nearly 1½ miles of new iron pipe, in most cases replacing the old cement pipes where they were weak and unsafe.

There are now about 4 miles of iron pipe laid, and about 18 miles of cement pipe remaining. It would seem to be economy, on account of the low price of iron at the present time, to relay all of the old cement pipe that is unsafe, and for that reason we have contracted for about 10,000 feet of iron pipe of various sizes, to be laid during the coming summer.

Our buildings, pumping machinery, &c., are in good order and should require but little outlay for several years, unless some extraordinary repairs should be necessary.

The water supply from the wells has been sufficient most of the time, so that very little water has been taken from the river the past year.

The reports of our Secretary and Superintendent will give you detailed statements of their departments, to which we refer you.

All of which is respectfully submitted.

HARPER DUSENBURY, JOHN ANDERSON, JOHN EVANS, ABEL BENNETT, JAMES B. WEED, WATER COMMISSIONERS

A. F. UPTON, General Agent,

C. W. STORER, Agant,

132 North Third street, Philadelphia.

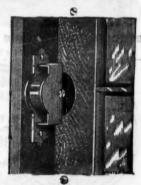
PATENT

48 Congress street, Boston.

Anti-Window

RATTLER.

Dwellings, Cars, Steamboats, &c.



The Anti-Window Rattler supplies a long needed want; it is so simple in construction that it can be used on any window, and so complete that it will prevent the slightest shaking, no matter how great the jar or how old the sash. As shown in cut, it consists of a rubber wheel in a nickel-plated or prass frame; is ornamental as well as useful, and does not interfere with raising or lowering the

HEATON & DENCKLA, GRAHAM & HAINES, 507 Commerce St., Philadelphia.

OTIS D. DANA,

Agents,
Agents,
113 Chambers St., New York. 26 to 32 Pearl St., Boston, Mass

NICHOLS' SELF-ACTING CARBOY PUMP.



Indispensable to Brass and Copper Manufacturers, Iron Foundries. Galvanizing Shops, Smelting Works, &c., &c.

For circulars or orders Address cid Pump & Siphon Co

New London, Conn.



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GARDEN TOOLS

WE MAKE ALL KINDS OF

House Furnishing Goods.

TERPRISE MFG. CO., Geneva, Ohio

LLS ARCHIMEDEAN LAWN MOWER CO

Hartford, Connecticut, U. S. A., LTUD TEXADOS GMA MESS

MANUFACTURERS OF

ARCHIMEDEAN" and

Celebrated 1-XL Curlery, Razors, &c a c cors & co.

A SULTA NOTE THAT A CONTROL OF THE SULTAN AND A CONTROL OF

For Hand and Horse Power.

Oldest Manufacturers of LAWN MOWERS in the United States and the Largest in the World.

"CHARTER OAK" LAWN



The most beautiful and perfect Lawn Mower in the world. It stands to-day at the head of the list of Lawn Mowers in the United States and Europe.

The machine is mounted on two large driving wheels or pulleys, and instead of being on the outside of the frames, to run in the uncut grass, like all other wheel-mowers, they are placed inside the frames, back of the cutting blades, running on a shaft, each independent of the other, allowing the machine to be turned either to the right or the left without injury to the sod, and to be turned around in a circle no greater than its own length, and cutting at the same time.

It is also provided with a neatly constructed iron handle, which being adjustable, can be raised or lowered at the convenience of the operator, allowing the machine to adapt itself to the inequalities of the ground without losing power, and at the same time to make an even and level cut.

One very important feature is its three-bladed solid revolving cutter, working in patent boxes, so constructed that grass cannot wind around the shaft of the cutter, which overcomes a serious objection in most all other Lawn Mowers.

It is a model of beauty, very compact, beautifully finished and thoroughly made ; Ind, to those desiring a perfect Lawn Mower, we will say that you will find the "CHARTER OAK" far superior to any other, as it is far more durable, easier to adjust, operate and keep in order, and the driving wheels being inside the frames enables the operator to cut the grass clean around walks, drives, flower-beds, trees and shrubbery.

BE SURE AND SEE IT BEFORE YOU BUY.

MANUFACTURED IN FIVE SIZES:



"ARCHIMEDEAN" LAWN MOWER,

Latest Improved Style.



The Mower contains all the improvements that experience in their manufacture can suggest, are easily operated, have full rollers, noiseless ratchet and an adjustable iron handle, which can be raised or lowered at the convenience of the operator, (a very important consideration) and will do dulating, and are the lightest roller Lawn Mower yet made of their capacity.

and Diploma at the World's Fair at Vienna, and Medal and

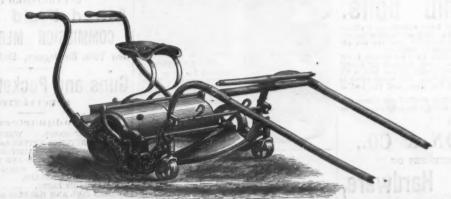
Diploma at the Centennial at Philadelphia.

MANUFACTURED IN SEVEN SIZES:

8 inch.....\$12.00 14 inch, Standard 25.00 22 inch, for 2 men 35.00

ARCHIMEDEAN" HORSE-POWER LAWN MOWERS.

O. Brass, Galvanized & Ship The "Archimedean" Horse-Power Lawn Mowers, for public parks and large private lawns, are capable of doing a large amount of work. They embrace all the improvements that experience could suggest, and can be seen in practical use on nearly all the public parks in this country. They have been in the market for three years, and we have yet to hear of one that was not satisfactory in every way. They are the lightest draft machines of their capacity, and can be easily operated by a pony or light horse. We will send them to any wishing to purchase, either for private or public lawns, subject to approval, and, if not satisfactory, they may be returned at our expense. Be sure and see them before buying.



LIST OF SIZES AND PRICES :

24 inch, Donkey.....\$50.00 28 inch cut, Pony..... 100.00 32 inch cut, Horse...... 125.00 Copper-fastened Horse Boots, per set..... 12.00 Grass Boxes for Horse Mowers..... 10,00 Shafts and Seat, extra..... 20.00

A Liberal Discount to the Trade.

Cutlery.



PEN AND POCKET CUTLERY, Solid Steel Scissors, Shears, Razors, &c.

ELECTRIC RAZORS," and the "ELECTRIC SHEARS." Nickel Plate

Agents for the BENGAL RAZORS. AMERICAN TABLE CUTLERY, BUTCHER KNIVES, &c.

101 Chambers and 73 Beade Sts., N. Y.

423 N. Pinth St., ST. LOUIS, MO.

MERIDEN CUTLERY COMPANY. THE "PATENT IVORY" HANDLE TABLE KNIPE.





of Pen and Pocket Cutlery, Pepperell, Mass. forged by hand from the best Cast Steel, and warrants awarded the Gold Medal of the Conn. State Agricults (ork with E. P. Whipple, too Chambers St.

NAUGATUCK CUTLERY CO., Manufacturers of FINE PEN & POCKET CUTLERY.

Cutlery.

HAVE YOUR HAIR CUT.



Clark's Hair Clipper.

McCOY & CO.

Sole Agents,

132 Duane Street, New York. | Silver Medal, 1878-Paris.



J. R. SPENCER & SON Albion Steel Works, Sheffield,

MANUFACTURERS OF FILES

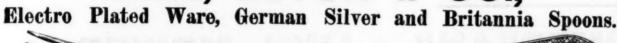
STEEL, Table Knives, Razors, Shovels, &c., &c., of every description.

CORPORATE MARK

 $\mathsf{SHEFFIELD}$

Granted 1749.

HALL, ELTON & CO.,





Factories, Wallingford, Conn.

Salesroom, 75 Chambers Street, New York

STANLEY RULE AND LEVEL CO.

Improved Carpenters' Tools.



HEINZ & MUNSCHAUER

NUFACTURERS

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BALL'S PAT. SOLID STEEL SHEEP SHEARS. These shears are unsurpassed for cheapness, durability and utility. They are made of one solid piece of steel from point to point, and cannot be broken in use either in the bow or at the junction of the shank and blade. Samples can be seen at above address, or sample for turnished.



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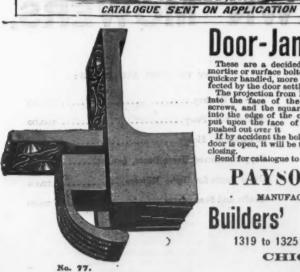
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Velocipede Scroll Saws, No. v, \$11.00; No. v, \$15.00;
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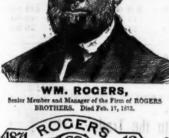
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To Strip 12 dwts. of Silver per dozen.

Our Knives are guaranteed to be

ALL HAND BURNISHED.



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We guarantee Spoons, Forks, &c. to be plated on 18 PER CENT. NICKEL SILVER, AS FOLLOWS: On TEA SPOONS, 21 ounces, or 50 dwts. per gross. On DESSERT SPOONS, 34 " " 75 " "100 ", On TABLE SPOONS, 5 " 75 On DESSERT FORKS, 34 On MEDIUM FORKS, 5 "100 "

OUR SPOONS, FORKS, LADLES, &c. ARE STAMPED On Extra Plate, . . . 1871, ROGERS @ 5 oz. On DOUBLE PLATE, . . 1871, ROGERS @ 8 oz. and are put up in rack boxes with On TRIPLE PLATE, . . . 1871, ROGERS & 12 oz. hinge covers. On QUADRUPLE PLATE, . 1871, ROGERS & 16 oz.

50 PER CENT. HEAVIER than any other brand of goods.
Our Hollow Ware in addition to our trade
mark is stamped SEXTUPLE PLATE

we being the only firm who manufactur this weight of plate.

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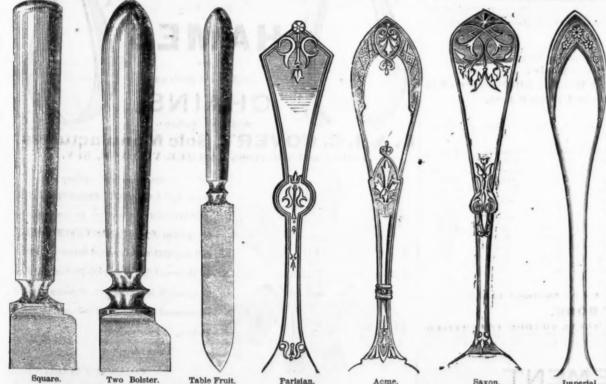
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All Hollow Ware stamped as above is war ranted to be plated

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THE ABOVE IS A FAC-SIMILE OF OUR GUARANTEE CARD WHICH: ACCOMPANIES EACH DOZEN OF OUR FLAT WARE, AND EACH PIECE OF OUR HOLLOW WARE. Our goods have been in the market since 15y, and are acknowledged by all dealers, who have tried them, to be the best.

[] We would call especial attention to the EXTRA STRONG SPRING TEMPERED SHANK, which we have on our Tipped, Fiddle, Saxon and Imperial patterns.



Goodell Company's **Table** Cutlery.



This is the Original Solid Hot Water Proof Handle. Unequaled in strength, unapproached in style, unexcelled in finish. Our new styles are exceedingly popular, and for weeks we could not supply the demand. With additional machinery we have largely increased our production, and can now fill orders promptly, and respectfully solicit the public patronage.

GOODELL COMPANY, Sole Manufacturers,

Antrim, N. H.

Metallurgical Notes.

MANUFACTURE OF FOUNDRY PIG IN NORTH-

An interesting instance of the changes wrought by the introduction of highly heated blast in pig iron manufacture, is given by a writer in Dingler's Polytechnic Journal. A great deposit of iron ore known as "Minette" extends through the northas "Minette" extends through the northeastern portion of France, commencing near
Longwy and ending in the immediate vicinity of Nancy, portions of it extending into
Luxemburg and Belgium. This deposit,
which is many feet in thickness, was the
foundation of a great iron industry, which
IO years ago made exclusively white mill
pig, the ore running too high in phosphorus
—from 0.4 to 0.7 per cent.—to admit of the
manufacture of any other grades of iron.
In the beginning of this decade, however,
Whitwell stoves were introduced with great
success into the old works, and the new ones
created by the great demand for iron after created by the great demand for iron after the Franco-German war, and thus the entire iron industry of the region assumed a different character. The majority of the new works and many of the old furnaces became, by reason of the improvements in-troduced, producers of foundry iron under such exceptionally favorable circumstances that they have been able to outlive the pres-ent crisis without suffering actual loss. The ent crisis without suffering actual loss. The mode of manufacture differs so little in the various works, that a description of any one establishment will apply to all. The furnace of Messrs. Ferry, Curicque & Co., of Micheville, is located near the French village of Villerupt, in the Alzette Valley. It is 69 feet high, has a diameter of 8 feet at hearth, 22 feet at boshes and 13 feet at top. Blast, varying in pressure from 4 to 6 inches of quicksilver, is blown through four tuyeres with 4.8-inch nozzles. The blast is heated exclusively by waste gases in five Whitwell stoves, 21 feet in diameter and 28 feet high, three of which are always working on gas stoves, 21 feet in diameter and 28 feet high, three of which are always working on gas and two on blast, a change from gas to blast taking place every hour. The temperature reached varies in the dry season from 1200° to 1300° F., and in winter from 1000° to 1100° F. The furnace is open-topped, and the gas is carried off both from the circumference, by a pipe 13 feet in diameter, and from the center, by a pipe 8 feet in diameter. ference, by a pipe 13 feet in diameter, and from the center, by a pipe 8 feet in diameter. These unite and conduct the gas through an apparatus in which it is deprived of its dust by so-called dust bags. The coke and stock are brought to the furnace by a railway which lies 36 feet above the level of the furnace top, so that they are cheaply and easily handled. The pig iron made is brought to the road level by a steam hoist. In making foundry pig from "minette" ore with superheated blast, two points must be particularly observed—the raw materials must be mixed in the proper way, and the amounts smelted must be kept within certain limits. The ores, red and gray, are mixed in such a manner that the cinder made holds from 43 to 45 per cent. of lime, 18 to 20 per cent. of alumina, and 33 to 35 of silica, the yield being from 29 to 30 per cent. of iron. The ing from 29 to 30 per cent. of iron. The charge of coke is 4 tons, which, according to circumstances, bears a burden of 10 to 11 tons of ore, so that the consumption of fuel tons of ore, so that the consumption of fuel is about 121 to 137 parts to 100 parts of pig. The furnace makes 60 tons of good foundry pig per day, at a cost which is still considerably below present market prices.

KRUPP'S "MILD STEEL."

Herr Krupp, of Essen, has issued a circu-lar in which he calls attention to a product manufactured by him which he calls "Flusseisen," the equivalent of "ingot iron" of the Committee of the American iron" of the Committee of the American Institute of Mining Engineers on the nomenclature of iron and steel. This metal is really nothing but mild steel, and cannot in any way be termed a new metal, as some gushing Continental papers are inclined to do. Herr Krupp states that his Flusseisen, which contains about 0.10 carbon, has a tensile strength of 54,000 to 60,000 pounds per square inch, while for plates it rises from 57,000 to 60,000 pounds, with an elongation of about 25 per cent. and a reduction of area at rupture of 50 per cent.

KORSCHELT'S METHOD OF ESTIMATING PHOS PHORUS IN IRON AND IRON ORES.

In our issue of Nov. 21, 1878, we drew attention to the diversity of opinions which have been expressed by eminent authorities on the value of Prof. Korschelt's method of determining phosphorus in iron and steel.

In an article printed in a recent number of
the Berg-u.-Hütt. Ztg., Prof. A. Ledebur, of
the Freiberg School of Mines, indorses
Korschelt's method, at least for certain purooses. He states that if the neces cautions are taken, viz., evaporating the iron solution to as small a volume as possible, warming it to roo C. and pouring it into the molybdanium solution previously heated to roo C., and then heating the mixture on a water bath for 20 minutes and existing it continually—heated results. ture on a water bath for 20 minutes and agitating it continually—he obtained results, when analyzing pig fron containing about 0.1 per cent. of phosphorus, which came very near those formed by Sonnenschein's standard method. Generally there was a deficiency of about 0.03 to 0.05 per cent. Prof. Ledebur, however, states that it cannot be denied that the value of Korschelt's restricted degreesce, with an increase of the method decreases with an increase of the method decreases with an increase of the ratio of iron to phosphorus in the solution; that is to say, as the percentage of phosphorus in the substance examined grows smaller. Therefore he deems the method much more applicable for the estimation of ores high in phosphorus; for instance, for bog ores, argillaceous or colithic ores. For each care it always yielded to him results. such cases it always yielded to him results which were sufficiently accurate for the determination of their value.

PREPARED PEAT AS A FUEL FOR THE MANU-FACTURE OF PIG IRON.

Though not of great immediate interest to American ironmasters, recent successful experiments in Austria with peat as a fuel for the manufacture of pig iron, deserve attention, because they show how persistent and well directed enterprise will overcome almost any obstruction. The usual fate of

the excellent quality of the pig produced from pure circs, nor entail an entire reconstruction of the pant. Coke and limite were rejected for a rariety of rea one and nothing remained but peat, large deposit of which were known to exist in the vicin of Vordernberg. Unlike the material which has been for many years used in Southern Bavaria, this peat was unfit for direct use when dried in the air, and it became necessary to prepare it. This was done in a factory built according to the plans of Hermann Eichhorn. The peat is first finely ground, shaped into balls in a special machine and finally dried. Analyses showed the product to contain only traces of phosphorus and sulphur, 2.97 per cent. of ash and 21.25 per cent. of water. The result of many menths actual work was that it would be possible to smelt ores with a mixture of two parts of peat to one part of charcoal, without in the leavest interest of the contract of the peat in the leavest interest. many menths actual work was that it would be possible to smelt ores with a mixture of two parts of peat to one part of charcoal, without in the least injuring the quality of the pig nor affecting the supply of waste gas for roasting ore and generating steam. But it was found that 100 parts by weight of charcoal were at least equivalant to 200 parts of dry peat. It was decided, therefore, to coke the peat in a Thursfield furnace with superheated steam, and the results obtained have certainly been gratifying. Peat coke was found to be twice as heavy as charcoal, and notwithstanding the fact that as much as 66 per cent. of the whole of the fuel charged was peat cokes, the furnace worked regularly and without requiring any additional pressure of blast. A chamical analysis of the peat coke yielded 64.5 per cent. of carbon, 4.66 per cent. of ash, and 30.8 per cent. of gas. It was found that 109 parts of it were equivalent in calorific value to 100 parts of charcoal. THE SAVING EFFECTED IN GREAT BRITAIN BY THE USE OF STREET BAILS.

In a long and exhaustive paper on the economy of railway working, read before the Institute of Mechanical Engineers, Mr. Prico Williams publishes the following tabular statement, which shows the saving effected during the Jast 12 years by the substitution of Bessemer steel rails in the renewals of 10,104 miles of railway in the United Kingdom, previously laid with iron rails:

Average cost of renewal of one mile of single line. Cost of labor, 1760 yards 497 0 0

44 0 0 541 0 0 4,869 0 0 essemer Steel Rails (1 renewal): 118 tons rails at £12, 10/ per ton....

Cost of labor, 1760 yards at 6d.....

Difference per mile between steel and

 $\pounds_{40,138,875} = \pounds_{891,975}$ per annum. In a second table he attempts to show the In a second table he attempts to show the saving to be effected by the renewal with steel rails of the existing 24,65r miles of single line of iron rails during the next ten years; the prices of steel and iron rails being them the arms with figure to savel. being taken the same, viz., £6 per ton, and the life of steel rails being estimated at nine times that of the iron rails, credit being given in both cases for the scrap value of the old materials.

Average cost of renewal of one mile of single line. Cost of labor, 1760 yards 426 9 8 44 0 0 Cost of labor, 1760 yards at 6d..... 470 0 0 ence per mile between steel and

iron.

Total saving in period of life of steel
rails, 24,661 miles at £3,760 per mile...£92,725,351 Total annual saving during the period of life of steel rails taken at $_{45}$ years.

£92,725,351 = £2,069,563

These figures seem exceptionally favorable to steel rails, and we are inclined to doubt whether steel makers would be ready to indorse so strong an estimate as that upon which Mr. Price Williams's figures are based. The statement that one steel rail will outlast nine iron rails is certainly not warranted by general experience, although it may be possible that in exceptional cases the proportion given has been observed.

PHOSPHORUS AND CARBON IN STEEL BAILS. In connection with the recent discussion of the question of the relation between the chemical and physical properties of steel rails, it may be of interest to cite the regulations of the Russian government for the relation between the carbon and phosphorus. In ordering a large lot of steel rails (43,000 tons) from the New Russia Iron Works, the following relation was fixed:

Fh...o.5 to o.66 o.66 to o.68 o.68 to o.69 o.69 to o.70 Car.o.40 to 0.36 o.36 to 0.32 o.32 to 0.29 o.29 to 0.25

An important point of law was decided lately by Judge Raymond in Springfield, Ill., which is, in effect, that a company may be sued wherever it does business, and where and well directed enterprise will overcome almost any obstruction. The usual fate of charcoal furnaces resulting from increasing cost of fuel threatened a number of works in the Austrian Alps, notably the Vordernberg furnaces. It became necessary to fix for the future some substitute for charcoal the use of which would not injuriously affect brought against them.

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French Points, Window Shade Nails, Upholstering, WAGON NAILS, Molding Nails,

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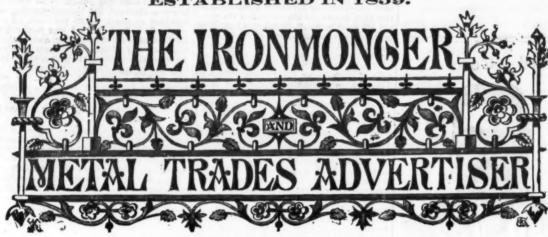
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Notes of Novelties.—This is a department of the journal always watched with interest by the trade, as it contains an account, from week to week, of the novelties which manufacturers and inventors are introducing to the notice of the trade. These articles are freely illustrated.

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PRICE LIST.-Per Dozen Pairs.

SINGLE JOINT HINGES.

(To Swing one way.)

slobel her		WITHOUT .	ACORN TIPS.	WITH ACORN TIPS.		
		BRASS.	NICKEL PLATED.	BRASS.	NICKEL PLATED.	
3	nch	\$ 3 00 4 50 7 50	\$ 4 50 6 50 10 00	\$ 5 00 6 75 10 00	\$ 6 50 8 75 12 50	

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(To Swing both ways.)

To be used on Door 1 inch thick, or less.

	WITHOUT	ACORN TIPS.	WITH ACORN TIPS.		
SIZE.	BRASS.	NICKEL PLATED.	BRASS.	NICKEL PLATED.	
23% inch	. \$ 6 60 8 30 16 50	\$ 9 00 11 50 21 00	\$11 50 13 50 21 50	\$14 25 17 00 26 00	

The large cut represents full size of our 5-inch Double Joint Acorn Tip Hinge for mortising.

The small cut represents the plain Single Joint Hinges, but not full size.

Sample pair will be sent by mail on receipt of

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of them and find they give perfect satisfaction, and it is with great pleasure that we and them to the Trade and Carrie Makers.

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The Iron Age Directory

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Weidersheim John & Co., no South 4th, Phila 8 Pens, Sirer! Esterbrook Steel Pen Co., New York	THE PERFECT SASH
Weideraheim John & Co., 110 South 4th, Phila	Fig.1
Pierson & Co 24 Broadway, N. Y. 4 Pipus, Fittings, etc., Makers of. Eaton, Cole & Burnham Co., 56 John, N. Y. 38	1
Monab & Hartin Mig. Co., & John, N. Y. 38 Pancoast & Maule, 227 Pear, Philadelphia. 38 Pipe Tougs. Nausfield Elastic Frog Co. New Hayen Copp.	
Pipe. Water and tas, Makers of. McNeals & Archer, Burlington, N. J. 6 Wood R. D. & Co., 400 Chestnut, Philadelphia38	
Pancoast & Maule, 27 Pear, Philadelphia. 38 Pipe Tougs, Mansfield Elastic Frog Co., New Haven, Conn. 41 Pipe, Water and Gas, Makers of, McNeals & Archer, Burlington, N. J. Wood R. D. & Co., 400 Chestnut, Philadelphia. 38 Plane I rons, Monufacturers of, Huck Bros, Milloury, Mass. 49 Planes, Money, Mass. 49 Planes, Money, Mass. 49 Planes, Money and Level Co., 49 Chambers, N. Y. 35 Stanley Rule and Level Co., 39 Chambers, N. Y. 35 Planted Ware. Hall, Elton & Co., 75 Chambers, N. Y. 38 Rogers Cutlery Co., Hartford, Ct. 29 Plannbers, Materials, Monayacturers of,	ME
Stanley Rule and Level Co., 29 Chambers, N. Y 28 Plated Ware. Hall, Elton & Co., 75 Chambers, N. Y 28	Will secure
Rogers Cutlery Co., Hartford, Ct. 29 Plumbers' Materials, Manufacturers of. Carr Wm. S. & Co., 106 Center, N. Y. 38	carpet. No ing. Manu
gverhart Jas. M., Scrauton, Pa. 44 Packet K nives. Boker Hermann & Co., 101 Duane, N. Y. 37	CONTRACTOR OF STATE
Rogers Cuttery Co., Hartrond, Cr. 29 Plambers' Materials, Manufacturers of. Carr Wm. S. & Co., 105 Center, N. Y. 38 Everhart Jas. M., Soranton, Ps	286
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Rules, Manufacturers of Staniov Rule and Level Co., so Chambers, N. Y28	
Sad Irons. Enterprise Mfg. Co., Philadelphia	
Sash Tighteners. Brower J. I. & Son, :86 Greenwich, N. Y	
Disston Henry & Sons, Phila.	

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hot, &c.	Wiley & Russell, Greenfield, Russ
hot, &c., Sparks Thos. W., 121 Walnut, Philadelphia	Tin Plate. Importers of N. & G. Taylor Co. Philadelphia
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inks . Manufacturers of.	Metcaif, Paul & Co., Pittsburgh, Pa
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pelter. Manning & Squier, 113 Liberty, N. Y. 2 Osgood F. & Co., Bergen Port, N. J. 33 Beons. Bogers Cutlery Co., Hartford, Ct. 22	Tube Expanders, Dudgeon Richard. 24 Columbia, N. Y
Osgood F. & Co., Bergen Port, N. J	Twist Drills, Makers of. Morse Twist Drill & Mach. Co., N. Bedford, Mass39
Rogers Cutlery Co., Hartford, Ct	Uphoisterers' Goods. Turner & Seymour Mfg. Co. St Reade, N. Y
Gautier Steel Co., Ld., Johnstown. Pa 28:36 Rowland Wm. & Harvey, Frankford, Phila	Valves, Gas, Water and Steam.
team Boilers. Firmenich J. G. & F., Buffalo, N. Y	Valves, Gas, Water and Steam. Ludlow Valve Mfg. Co., Troy N. Y. Mohawk & Hudson Mfg. Co Waterford, N. Y 40
Lealie Boiler Works, Jersey City, N. J	Ventilators. Bracher Ventilator Co., 3 Park Row, N. T 33
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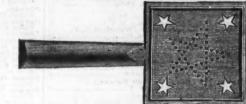
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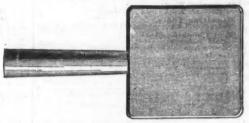


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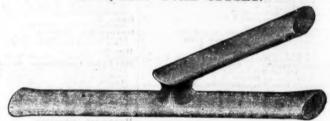
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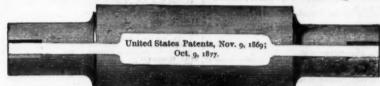
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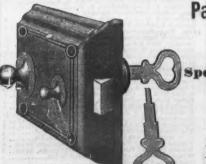


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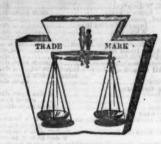
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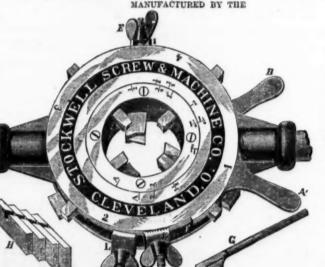
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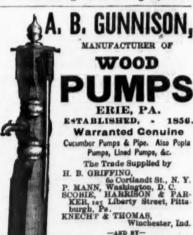
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Sarton's	Blue
Brook's	Chinein.
ever, Sargent's new list Dec. 78	Socket Framing, Crossmandia
" Japanned Lever	" Merrili
Pull, "Brook's dis so \$	Douglass'
" Western	Buck Bros new
Cow, Common Wroughtdis 20&10 % Westerndis 20&10 %	White Crayons. # gr Chiseits D. R. Barton Tool Co. (all kinds). Socket Framing, Crossman. dis Buck Bros. new Merrill Merrill Douglass Firmers, Crossman. Merrill Merri
" Kentucky "star"	Micrail. Witherby Tool Co. Douglass' Corner Tanged Firmers extra. Butcher's. Spear & Jackson's. Buck Bros (Shank).
Dodge's Genuine Kentucky, new list	Spear & Jackson's
Ballances	Clamps, iron, Providence Tool Co.'s, Wrt. Iron
" Texas	" Adjustable, Gray's. " Lambert's
Heliews. Blacksmiths', Common	" Snow's
Mouldersdis 26 %	" Hanmer's " Stearns' " Cabinet, Sargent's
Hand Bellows	" Cord and Tape (T. & S. Mrg. Co.)
** Kxtra and Pittsburgh Patterndis 20; Hand Bellows	Clips, Axle. Norway or Best
in	Superior Cockeyes
Extension, Barber's ₩ doz \$15.00—dis 40&5 \$ 1ves'	dacking, new list
Diagonal # doz #24.co-dis 40 %	Globe, Piain Blobs, Ale and Beer, new list
Hind Adjusters.—Domestic v doz \$3.00, dis 25 % Bling Fasteners.—Mackrell's	Coffee Mills.
van Sand's	Coffee Mills. Board and Hox. Increase Wilson's. Selson's Pat. American (Enterprise Mfg. Co.). Fronch Steel.
Merriman's	American (Enterprise Mfg. Co.) Fronch Steel
Blind Staples. Boardman's Patent, 16 in. and larger W B152 net	The Swift (Lane Bros.) Combined Givner Pail and Lante
Blocks.—Burr & Co	Compasses, Dividers, &c.
Penfield Block Works, Rope and Iron Strap'd. dis 40 %	Callipers
4 4 " " sil steel roll'r.dis 15 %	Compasses, Dividers, &r. Compasses. Callipers. Dividers. Eamis & Call Co.'s Dividers. Compasses & Callipers. Wing & Inside or Outsid Double. Cok's. Call's Pat. Inside. Excelsior.
Stanley R. & L. Co., Rope and Iron Strap'd. dis 35&10 5	Wing & Inside or Outsid
Coat fron Chain (Sargent's list)	Cleahte
Holts: Cast iron Barrel, Shutter, &c	Excelsior. Biller's Patent.
Shutter (Stanley's list)	Coopers' Toois. Bradley's
" Sunk Flush, Sargent's dis 6696& 10 5	Corn Knives and Cutters.—Bradley's.
B.K. Fiush, Com'n, Stanley'sdis co&756 %	Cast Steel
" Plated Knob & Slide Flush " dis 50&10% Carriage and Tire, Common	Miller's Patent. Coopers' Tools. Bradley's. Corkserews.—Humason & B Corkserews.—Humason & B Corw Knives and Cutters.—Bradley's. Crow Mars. Cast Steel. Iron, Steel Points. Cracibles.—Gautier & Co. Carling Irons, & Cc. (5, 6, % in. \$1.80, 200, 240. Curling Tongs. \$\psi\$ doz \$\frac{3}{2}\$ Pinchine Irons. \$\psi\$ doz \$\frac{3}{2}\$
R. B. & W (old list) dis 70% 5	%, %, % in., \$1.80, 2.00, 2.40
Bush's Lever and Chain Bolts. dis 40, 10810 5 Wrough's Irob Barpel. dis 6.810 5 Bush Pine Bush dis 6.810 5 Bush Pine Bush dis 6.810 5 Bush Pine Bush dis 6.810 5 Bush Pine Bornel's list). dis 6.810 5 Bush Pine Bornel's list). dis 6.840 5 Bush Bush Bush Bush Bush Bush Bush Bush	Curry Combs.
Tire. Are. Screw Co.'s, Phila	Fitch's (List of No. 240, \$1)
Stove—American Screw Co.'s dis 55&5 @ 50 %	Hotchkiss' Novelty
Plowdis 50 g	There is the second of the sec
Bolt Ends. dis 60 %	Meriden Cutlery Co. (Table)
Horing Machines. Upright. Angular.	Humason & Beckley, Pocket Naugatuck Cutlery Co.
Snell's, no Augers 4.75 6.25 dis 40 %	Aaron Burkinshaw's Pocket
Phillips' with Augers 0.00 dis 3". Bow Pins.	Dog Cellars. Embosed Gilt. Leather. Brass.
Humason. Beckley & Co.'s	Brass
isracen.—Harter's Patent	Forrey's Red
Botchkins* low list dis 10 5 Humsson. Beckley & Co. 5	No. 1, Large, Japanned P dos 22.
Noble's Patent	No. 2, Small. " Ods 2.
Hrackets, -Solf (Sargent's)dis 35 @ 40 %	Japanned
Bright Wire Goods. dis 70820 9	Galvanized # doz 4.00 4.50 5.0
Sargent's dis 70% to \$	Japanned Nos. 1 2 3
	Star (Coll)—For Cop'd, Nickel-Plated, &c. see
Butta	No. 5, Screen Door Size doz \$1.5
Cast Hrass, Tiebout's	No. 7. Large
Broad dis 66&10 dis 66&10	Sabin's Boss, No. 1, \$4.40; 2, \$4.20; 3, \$3.60.d
DRILLED AND TIRED.	and the second s
Fast Joint, Narrow.	darker's Concealed5 in., \$5.00; 8 in., \$7.
Fast Joint, Narrow and Broad dis 60&10 5 Broad dis 60&10 5 Loose Joint, Narrow and Broad dis 70&10 &10 Fast Joint, Narrow dis 50&10 5 Broad dis 60&10 5 Loose Joint dis 60&10 5 Loose Joint dis 60&10 5	rnisacepsia
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Fast Joint, Narrow dis 558:10 % Louse Joint Januaria dis 608:10 % Januaria dis 608:10 % Partiament Butts dis 658:10 % Hayer's Hinges dis 758:10 % Hayer's Hinges dis 758:10 %	rniaceipaia 5 in., \$5.00 ; \$ in., \$7. aarker's Concealed. Cowell's
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Fast Joint, Narrow dis 55kto 2 Louse Joint Louse Joint Jananaed dis 65kto 5 With Acorns Parliament Butts. dis 65kto 5 Hayer's Hinges. dis 75kto 5 Louse Pia no Acorn. dis 70kto 62to 5 Louse Pia no Acorn. dis 70kto 62to 5 Jananaed dis 70kto 62to 5 Union Mfg. Co.'s Fancy Butts- Weured Enameled Louse Joint. dis 56kto 5 Baston Pinins, Plain. dis 50kto 5 His Sokto 1 dis 50kto 5 Weight Pinins, dis 50kto 5 Herured Enameled Louse Joint. dis 56kto 5 His Sokto 1 dis 50kto 5 His Sokto 1 dis 50	forrill Nobles Mfg. Co kradley's djustable Handie. Vitherby Tool Co. Journase Aprills and April Stacks.
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	### Patent.	
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30	10.00	Porce	Head	T. & S Heaq, S	nt's Lis . Mfg. C argent'	List	**********	dis 60kmdis 60kmdis 60kmdis 60kmdis 40kmdis 40km	15
30	200	Porce	lain I	lead. T	& S. M	g. Co		dog 750. n	8
35	- 1	Pla Magic	Plait	Mach	hines.	1 to a 40 to 1 to 1	W do	a Sto.co, n	et
\$10 \$0 40	8	Crow	n Plat	ting Ma	chines.	oin., \$10	00,64Ch.	8 \$10.00, n 5.00, dis 20	8
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20	7 7	Bailey The S Bailey	's (Stanley	(S. R. dictor".	& L. Co.)	.) new ii	st Jan. '7	o.dis 25&10	XXX
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40	6	Huma Gas Pl Eurek	son & iers	Beckle	y Mig.	co		dis 321/4	**
10 5		Russe P. S. &	W. C	ast Steeled Cut	dting Nij	ppers	**********	dis 25	200
di	١,	Plu:	mbs s	inners	Cutting veis.	R Nipper	8	dis 20	1
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Baw Feora. Boynton's Patent. Stilliman's Genuine. Go. \$2,746 \$4.00 no. Stilliman's Genuine. Fo. \$2,32.4 dis 3. Common Lever. No. \$8.00 No. 1, \$1,500 dis 4. Remis & Call Oo. Lever & Spring Hashmer. dis 26. Femis & Call Oo. Lever & Spring Hashmer. dis 26. Femis & Call Oo. Lever & Spring Hashmer. dis 26. Imitation Plate and Cross Cut. dis 26. Hart's Patent Lever dis 500 dis 26. Tea. 400 Six.co dis 500 dis 26. Tea. 400 Six.co dis 500 dis 26. Family Universal. dis 26. Tambult's Market dis 26. T	
	Ventilators.
Poynton's Patente # dos \$3.75@\$1.00 B	et (lower) L.co
Cammon Loverper dos \$2.00, dis 3	Smith's Patent P dos \$12.00 dis 10
Leach's	Penny's
Hammer, Hotenkiss, & Cali On's New Patdis 40&:	Washers. See Nuts and Washers.
Plate and Cross Cutdis x	Well Wheels,—Bevised list
imitation	Brass and CopperList of July 1, 1878 dis 20
Disston'sdis 20	Nos. to @ 18, dis 17% @ 60
Hatch, Counter	Coppered
Union Platform	Nos. 7 to 18market list, dis 37% @ 40
Howe's	Cast Steel
Chatinos Eureka	Annealed Fence, Pos. 8 and 9
Favoritedis 40	Nos. 10 and 11 b b 9
Seale Beams, Chatillon's listdis se	Fence Staples
Adjustable Box Scraper (B. B. & L. Co.), \$6.50.dis 25&10	strbs Steel Wire
Box, I Handle	State Music Wire. Nos. 12 to 27
Defiance Hox and Ship	Judd's Picture Wire
" (Providence Tool Codis to	Wreuches. American Adjustabledis 45
Bart, Bliven & Meaddis 45&10.02	Maxter's Adjustable "8,"
Disston's Patent Excelsion dis 5216	Coes Genuine
Buck Bros dis 25 Stanley Rute & Level Cos., Varnished Hdisdis 50&10	Girard (Malicable)
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Fint H'd irondia 60	Merrick's Patterndis 40&5
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grass and Silver Capped	The Favorite Pocket (Bright)per doz \$8, dis to Wringers. Per doz
Lag of Common Coach	5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Beddis 10@15 Machine, Flat Head, Iron, Am. Serew Codis 25	Crown No. 2
Bench, Iron, dis 608 10	No. 3 60.0 Eureka, No. 1 57.0
Hickory	Novelty, No. 10, with Cog Wheels
Hand Rail, Sargents	No. B, for Set Tubs
Jack (Wilson's)	No. 2, Iron 4 Common Gear
Cast Steeldis 80	Peerless, No. o, no Cogs
Seymour's Straight Trimmers	No. 216, with Cogs
Pruning	No. 3, " 71.0
Tinners'	No. 1
R. H. S. " "dis 65	Stamped Tinware.—New List Dec. 1, 1878. Common Stamped Ware.
Sliding Door, M. W. & Co., listdis 35&10&2	Girard Gis G
Patent Roller	METALS.
Moore's Anti-Friction	IRONDUTY: Bars, 1 to 156c. B &: Sheet. Rand
Sargent's list	Hoop and Scroll, 134 to 134c. W B; provided, that none of the above Iron shall pay a less rate of duty than 3
Philadelphia Hangingdis 4085&25	wrought Scrap, \$8 \$7 ton; Polished Sheet, 3c. \$\tilde{\pi}\$ in Wrought Scrap, \$8 \$\tilde{\pi}\$ ton: Cast Scrap, \$6 per ton
Ames, New list, Jan. 1, '79	Pig fron—American.
Old Coloffy	No. 2
Dunning's Shovels and Scoopsdis 20&76 9 B. Rowland's "Regular." new list	Gray Forge
Oxford Patent, new listdis 40&5 %	Rails. 22.00
fron and Brass Head, R. & E. listdis 50%2 S	Ruis- Fron, at mill. # ton \$32.00 @ 36.00 Steel. # ton 43.00 @ 44.00 Old Ralis. # ton 2.00 @ 21.00
Philadelphia Hanging	Old Rails # ton 2.00 @ 21.00
Square Frames, Round Cornered, by casedis 70 % Less than a casedia 64210 %	Wrought Scrap, from yard. P ton, nom. 24.00 & 25.00 thar Iron, from Store, Common Iron:
Spoke Shaves. Deflarice Metallicnew list, dis 25&10 %	Common Iron: § to 2 in. round and square † b 1 750
Irondis 40&10 %	Refined Iron:
Bailey's (Stanley R & L. Co.) new list dis 25&10 %	1 to 6 in. x 36 to 1 in
stearn's	Refined from: \$\f\$ to 2 in. round and square \\ \psi b 2.00 1 to 6 in. \(\psi_1 \) to 7 in \\ \psi b 2.00 1 to 6 in. \(\psi_1 \) to 7 in \\ \psi b 2.00 Rods - \(\psi_2 \) and 11-10 round and square \\ \psi b 2.10 Rands - 1 to 6 \(\psi_2 \) to 6 \(\psi_2 \) to 80. 12 \\ \psi b 2.40 Swodish from:
Square Frames, Round Cornered, by case dis 70.5 Less than a case dis 66.21.05 Spokke Shaves dis 40.21.05 Irin dis 40.21.05 Wood dis 40.21.05 Balley's (Stanley R & L. Co.) new list. dis 25.21.05 Wood dis 40.21.05 Spokke Trimmerrs W dox \$10.00, dis 40.25 Spoke Trimmerrs W dox \$10.00, dis 40.25 Spoke Trimmerrs W dox \$10.00, dis 40.25 Stearn's dox \$10.00, dis 40.25 Stearn's dis 50.20 Spokes W dox \$40.00, dis 40.25 Stearn's dis 50.20 Spokes W dox \$40.00, dis 40.25 Stearn's dis 50.20 Spokes W dox \$40.00, dis 40.25 Stearn's dis 50.25 Spokes dis 50.25 Sp	Swedish Iron: Ordinary sizes
Tinned Irondis 15 %	Ordinary sizes Sheet Feb. Common R. G.
Britannia	Nos. 10 to 20
L Boardman's Sons, A1dls jok's & Cash Rogers & Bro., A 1dls jok's & Cash	25 to 26
Reed & Barton dis 40% 5 %	cal vanized, 14 to 20, B. B. W to blic; 2d qual, W to the
Holmes, Hooth & Haydensdis 4085 %	21 to 24, " P B 7540; " P B 6540
Diamond Steel (L. Boardman's Sons)dis 30% 5	" 25 " W B 5/4C; " W B 7/4C
" Tables	Russia. P b Nos. 8 to 14, 120
Stocks and Diesdis 20 \$	COPPER DUTY: Pig, Ear and Ingo t, to: OldCopper 40 3: W Manufactured (including all article of
"Lightning" Screw Platedis. 10 \$	which Copper is a component of chiefvaiue), 45 % ad valorem.
Ax Stone	SHEATHING, BRAZIERS' COPPER, BOLTS, &C.
Sand Stone	P sq. ft
Store	Over 12 Of, W SQ. It
Arkansas Stone	Circles less than 84 in in diameter
Turkey Oil Stone (Boyd & Chase)4 to Sin, \$1.00 % b.	
dis to 5	Jircles & in. diameter and over. # 3 310 Segment and Pattern Sheets # 5 270
" Slips "\$2.50 \$ B, dis to \$	Jirries & in. dismeter and over. # b sic Segment and Pattern Sheets # b 270 Landmotive Fire Box Sheets # b 260 Sheathing Copper, over 12 0x. # sq. ft. # b 240
Slips Lake Superior (Boyd & Chase) \$2.50 \$\mathbb{R}\$ b, dis 10 \$\frac{5}{3}\$ Slips Grindstones, Family, Loring \$\frac{1}{3}\$ \$\mathbb{R}\$ b 400, dis 10 \$\frac{5}{3}\$	Tircles 34 in. diameter and over.
"Slips (Boyd & Chase). \$\psi\$ x.c. \$\psi\$ h, dis 10 \cdot \(\text{S} \) \square \(\text{S} \) \text{Discover} \(\text{Res} \) \square \(\text{S} \) \text{Like Superior} \(\text{Chase} \) \square \(\text{S} \) \text{Lips} \(\text{S} \) \square \(\text{S} \) \square \(\text{Lips} \) \quare \(Direies 34 in. diameter and over. **Direies 34 in. diameter and over. **Position of the property of the
"Slips "Arc, dis no 8, 5 pm and 10 p	Jircies & In. diameter and over. By By St. Regment and Pattern Sheets. By B
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P & Chase). # B xc, dis 10 x Slips "P & xc, dis 10 x Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slips "P & xc, dis 10 x 5 s Slave Pollats. Loring's dis 10 x Slave Pollats. P gross \$6.00, dis 5 g Gem P gross \$6.00, dis 5 g Gold Medai P gross \$0.00, dis 5 g S "Mirror" # gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & gross \$6.00, dis 5 g S Bully P & g S S S S S S S S S S S S S S S S S S	For tinning both sides, double the above amount o'neill's patent planished copper.—Net.
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For finning both sides, double the above amount o'neill's parent plantsilks Corper, —Net. 14 and 15 or, and heavier., # 2 31c. By the case, # 2 30c 12 02. and lighter # 2 4 31c. By the case, # 2 33c Holler Sizes. 7 in, 14 x52. 8 in, 14 x50. 9 in, 14 x6. 14 and 16 02. and heavier. # 2 32 if y the case. # 2 32c (And all sizes not over 20 in. Wide.) 14 and 16 02. and heavier # 3 30c. 14 2 32c # 3 35c. 14 2 32c # 3 35c. 14 3 35c. 3 35c # 3 35c. 3 35
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For finning both sides, double the above amount O'SELL' PATEST FLANSHIES COPPER.—Net. 44 and 16 oz. and heavier., # \$ 21c. By the case. # \$ 30c 12 oz. and lighter
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For finning both sides, double the above amount O'SELL' PATENT FLANSHIEL COPPER.—Net. 4 and 16 oz. and heavier., # 2 31c. By the case. # 2 30c 12 oz. and lighter
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For finning both sides, double the above amount o'sell's parent plantshike Corpers.—Net. 4 and for, and heavier., # 2 21c By the case. # 2 30c 12 02. and lighter # 2 16 21c By the case. # 2 30c 12 02. and lighter # 2 4 21c By the case. # 2 30c 14 and 16 02. and heavier. # 2 32 if y the case. # 2 32c (And all sizes not over 20 in. wide.) 4 and 16 02. and heavier. # 2 32 if y the case. # 2 32c (And all sizes not over 20 in. wide.) Brown & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blass Manufacturellus Prince List.—dis nominal. July 1, 1978. Cash prices for Boll and Sheet Brass. For less quantity than 102 28. add 30 ¥ 2. BION BOLD STANDARD S
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For finning both sides, double the above amount o'sell's parent plantshike Copper, —Net. 4 and for, and heavier., # 2 21c By the case. # 2 30c 12 02. and lighter # 2 14 21c By the case. # 2 30c 12 02. and lighter # 2 4 21c By the case. # 2 30c 12 02. and heavier. # 2 30c By the case. # 2 30c 14 and 16 02. and heavier. # 2 30c By the case. # 2 30c 14 and 16 02. and heavier. # 2 30c By the case. # 2 30c Brown & Sharp's Gauge the Standard for Micro. Brown & Sharp's Gauge the Standard for Micro. Brass. Brown & Sharp's Gauge the Standard for Micro. Brass Assurfacturellas Prince Light. —dis nominal. July 1, 1978. Cash prices for Roll and Sheet Brass. For less quantity than 102 28. and 2 9 2. all Nos. not thinner than 10 No. 28, wider than 2 in., not wider than 4 fail
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For tinning both sides, double the above amount o'NELL' PATENT FLANISHED COPPER. — Not. 14 and 16 oz. and heavier. , # B 31c By the case. # B 30c 12 oz. and lighter , # B 31c By the case. # B 33c Both States. 14 and 16 oz. and heavier. # b 33c By the case. # B 32c By the case. # B 33c By the case. Brown & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standar
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	For tinning both sides, double the above amount o'NELL' PATENT FLANISHED COPPER. — Not. 14 and 16 oz. and heavier. , # B 31c By the case. # B 30c 12 oz. and lighter , # B 31c By the case. # B 33c Both States. 14 and 16 oz. and heavier. # b 33c By the case. # B 32c By the case. # B 33c By the case. Brown & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standard for Wire. Blue & Sharp's Gauge the Standard for Metal; Old English Gauge the Standar
"Slips "P. c, dis 10 & 5 & 5 & 5 & 6 & 6 & 6 & 6 & 6 & 6 & 6	Sheathing Copper, over 12 02. # 90, ft. # B 250 Robt Copper. # B 260 Robt Copper. # B 260 Robt Copper is Sheathing except 147.4 Inches and not to exceed 34 02. to the 84. 12. 147.48, by the case # Sheathing except 147.4 Inches and not to exceed 34 02. to the 84. 11. 147.48, by the case # Sheathing except 147.4 Inches and not to exceed 34 02. to the 84. 11. 147.48 by the case # Sheathing Pers. Not. 147.48 by the case # Sheathing Port Inches Inc
"Superior (Boyd & Chase). # B xc, dis 1025 5 Sips # B xc, dis 1025 5 Grindstones, Family, Loring's dis 1025 5 Grindstones, Grindston	For tinning both sides, double the above amount O'SELL' PATEST FLANSHIES COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 12 oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 1025 5 Sips # B xc, dis 1025 5 Grindstones, Family, Loring's dis 1025 5 Grindstones, Grindston	For tinning both sides, double the above amount o'NELL' PATENT FLANISHED COPPER. Not. 1448. 44 and 16 oz. and heavier. # \$ 31c By the case. # \$ 30c 12 oz. and lighter # \$ \$ 40c 20. and heavier. # \$ 35c By the case. # \$ 35c 14 and 16 oz. and heavier. # \$ 35c By the case. # \$ 35c 14 and 16 oz. and heavier. # \$ 35c By the case. # \$ 35c 12 oz # \$ 35c 12 oz # \$ \$ 35c 12 oz # \$ \$ 35c 12 oz # \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$
"Superior (Boyd & Chase). # B xc, dis 1025 5 Sips # B xc, dis 1025 5 Grindstones, Family, Loring's dis 1025 5 Grindstones, Grindston	For tinning both sides, double the above amount O'NELL' PATENT FLANSHIELD COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 1z oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 1025 5 Sips # B xc, dis 1025 5 Grindstones, Family, Loring's dis 1025 5 Grindstones, Grindston	For tinning both sides, double the above amount o'NELL' PATENT FLANSHIELD COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 12 oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 10% 5 Sipe # B 400, dis 10% 5 Sign # B 400, dis 10% 6 Sign # B 600, dis 10% 6 Sign # B 6	For tinning both sides, double the above amount o'NELL' PATENT FLANSHIELD COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 12 oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 10% 5 Sipe # B 400, dis 10% 5 Sign # B 400, dis 10% 6 Sign # B 600, dis 10% 6 Sign # B 6	For tinning both sides, double the above amount o'NELL' PATENT FLANSHIELD COPPER, Not. 1448. 44 and 16 oz. and heavier. # \$ 31c. By the case. # \$ 30c 12 oz. and lighter # \$ 34c. By the case. # \$ 30c 12 oz. and lighter # \$ 34c. Phile Sizes. 4 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. By the case. # \$ 35c. 14 and 16 oz. and heavier. # \$ 35c. 17 the case. # \$ 35c. 17
"Superior (Boyd & Chase). # B xc, dis 10% 5 Sipe # B 400, dis 10% 5 Sign # B 400, dis 10% 6 Sign # B 600, dis 10% 6 Sign # B 6	For tinning both sides, double the above amount O'NELL' PATENT FLANSHING COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 1z oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 10% 5 Sipe # B 400, dis 10% 5 Sign # B 400, dis 10% 6 Sign # B 600, dis 10% 6 Sign # B 6	For tinning both sides, double the above amount O'NELL' PATENT FLANSHIELD COPPER.—Net. 14 and 16 oz. and heavier., # B 31c. By the case. # B 30c 1z oz. and lighter
"Superior (Boyd & Chase). # B xc, dis 10% 5 Sipe # B 400, dis 10% 5 Sign # B 400, dis 10% 6 Sign # B 600, dis 10% 6 Sign # B 6	For tinning both sides, double the above amount o'NELL' PATENT FLANSHIELD COPPER. —Not. 14 and 16 Oz. and heavier. , # B 310 By the case. # B 300 12 Oz. and lighter # B 340 " # B 350 12 Oz. and lighter # B 340 " # B 350 12 Oz. and heavier. # B 350 liy the case. # B 350 14 the case. # B 350 liy the case. # B 350 14 the case. # B 350 15 Oz. and heavier. # B 350 liy the case. # B 350 12 Oz # B
"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NELL' PATENT FLANSHIELD COPPER. —Not. 14 and 16 Oz. and heavier. , # B 310 By the case. # B 300 12 Oz. and lighter # B 340 " # B 350 12 Oz. and lighter # B 340 " # B 350 12 Oz. and heavier. # B 350 liy the case. # B 350 14 the case. # B 350 liy the case. # B 350 14 the case. # B 350 15 Oz. and heavier. # B 350 liy the case. # B 350 12 Oz # B
"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NeIL' PATENT FLANSHIELD COPPER.—Net. 44 and 16 Oz. and heavier # B 310. By the case. # B 300. Iz Oz. and lighter
"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NeIL's PATENT FLANSHIELD COPPER.—Net. 44 and 16 Oz. and heavier # B 310 By the case. # B 300 12 Oz. and lighter
"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NeIL' PATENT FLANSHIELD COPER.—Net. 14 and 16 oz. and heavier., # B 31c By the case. # B 30c 12 oz. and lighter
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"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NeIL' PATENT FLANSHIELD COPER.—Net. 14 and 16 oz. and heavier., # B 31c By the case. # B 30c 12 oz. and lighter
"Superior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % State # foliable. # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # b xc, dis 108.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.0, dis 5.5 % Siperior (Boyd & Chase). # gross \$0.75, net kising Sun. # gross \$0.00, dis 5.5 % Iron dis 5.5 % [full cases, dis 20.5 %	For tinning both sides, double the above amount o'NeIL' PATENT FLANSHIELD COPER.—Net. 14 and 16 oz. and heavier., # B 31c By the case. # B 30c 12 oz. and lighter
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"Superior (Boyd & Chase). # B xc, dis 1085 5 Sipe # B 400, dis 108 5 Sipe	For tinning both sides, double the above amount o'NeIL' PATENT FLANSHIELD COPER.—Net. 14 and 16 oz. and heavier., # B 31c By the case. # B 30c 12 oz. and lighter

	No.22	11
13	NO.24	63
0%		10
1	No.30	57
*	No.32	73
0%	Spring Wire at P B advance. Flat, Square and Haif Round Wire 40 P B advance on Round Wire.	8
5 %	Fancy Wire not less than rec 2 to advance of Pony	a
No.	Wire, Brass Rods, No. 8 and larger not less than 2 feet tengths, 33c. Wire straightened and cut, smaller than No. 8, an	8
***	Wire straightened and cut, smaller than No. 8, an not less than 2 feet lengths, 32c. Wire and Rods less than 2 feet lengths, special rater Twelve cents per B extra for specifing on 1 B special RODS RECELLARGOUS. Common Plain Brass Pall Ears. \$0.3 Brass Door Rail.	CE S.
60	Twelve cents per h extra for spooling on x h spools MISCELLANEOUS. Common Plain Brass Pail Ears. \$0.3	6
100 140	Brass Door Rail	8
1d		0
et	Terms—Net cash. Interest to be added after thirt;	y
iet S.S.	Plain to No. 20 inclusive, above 1/4 in. to 3 in	0800
2000	Nos. 21, 23, 23, two cents advance on List for each Number. Nos. 24, 25, 26, four cents advance on List for each Number.	
4 26 16	Plain 14 took	
	9-16 4	
5.5	All Mandrel Drawn Tubes, 5 cents advance on List Prices. Fancy Tubing to No. 20	
* * *	Fancy Tubing to No. 20. English, Scotch and Extra Patterns Fancy Tubing to No. 20. Tubing Sawed or Cut 2 to 4 feet long, 2 cents ad-	
02,	vance on List, Add to 2 cents 1/2 cent for each additional cutting under 2 feet.	
00	All Mandrel Drawn Tubes under 1/2 in., 25 cents per pound advance.	
00	Plain. 22 Fancy 2	3
00	Scotch and Extra Patterns. 33 GERMAN SILVER TUBING.—dis 10 % 4 Per cent	
00	6 44	2
00	15 44 L.X 10 4 L.X 18 4 L.X	ò
00	10	
00	cents, and not above 11, 3 cents # B; over 11, 35 cents # B, and 10 % ad val. Railway Bars, 154 cents # B.	
00	STEEL,.—DUTY: Bars, Ingots, Sheets and Colls, valued at 7 cents \$\pi\$ \$\pi\$, or under, 24\forall cents; over, 7 cents, and not above 11, 3 cents \$\pi\$ b., or under, 24\forall cents; over, 7 cents, and not \$\pi\$ and 10 \$\pi\$ an	
N.Y	description, shall be classed as American Cast Steel.	
	Spring	ı
die	Fire 5500 Machinery (round and square). 500	
35	SheetII @ 160	
00	gang and X cut	-1
50	Fool extra fine 20 750	ı
0	Machinery	I
00	Boat Coat 20 th relec	I
00 00	** Swaged, Cast	I
1	German Steel, Best	I
c	3dq uality # h 90 Sheet Cast Steel, 1st quality # h 15/56 quality # h 15/56 3dquality # h 14/50 3dquality # b 12/50	I
e	ANTIMONY LEAD,—DUTY: Pig 22 # 100 Bs; vid Lead, 1540 B # Pipe and Sheet, 2540 W B. Also @ 4540	١
- 80	Fipe and Sheet, 24c F B. American bar	ı
1	Pipete. dis 10 %	ı
	Tin Linea Pipe	
1	N. P. U	l
3	b : Electro-galvanised Plates, or w b : Manufactures of, not enumerated, 35 per cent. ad. val. Bars, Block	
: 18	straits w to 10:01016	l
1	English	
	C 12 V 19 " 0.75 GB 7.00	
I	X 10X14 Prime Charceal	
1	0 X 125 X17	
I	C tox14 } \$6.00 \$.75 \$.25 \$.50 \$.50 \$.75 \$.25 \$.50 \$.75 \$.25 \$.50 \$.75 \$.25 \$.50 \$.75 \$.25 \$.50 \$.75 \$.25 \$.25 \$.50 \$.75 \$.25 \$.25 \$.50 \$.25 \$.25 \$.25 \$.25 \$.25 \$.25 \$.25 \$.25	
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I	Prime Char. 2d quat. Coke. C 14X22	
İ	X 20X20	
28	X 14x20	-
AB	merican, cash	
Z	100 Bs. 100	-
1	Paper Stock, Old Metals, &c	
	(Dealer's Selling Price.)	
W	Thite cotton, new	
Se M	oconds	
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WR		
G	entucky bale rope 4 4 4 4 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
W	hite collar cuttings, all paper. 7 """" """" """ """ """ """ """	
Bo W	ard White Shavings, No. 1	
In	perfections, No. 2, best folded sheets314 is	
Bo	ok Stock	
Pr Pu	wspapers	
Ho Co Bi	gus Manilas and Hardwares. 1 G 22a mmons. 60 G nders' Board Cuttings. 1	
Sti	raw Board Cuttings. 94 @ 14 octon Tailor Clips. 19 @ 14 interest 19 octon Tailor Clips. 19 @ 14 interest 19 octon 19 oct	
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Wi	chinery from per ton \$18 50 chinery from per ton 12 50	N
Sto	re Manilas gras Manilas and Hardwares gras Manilas and Hardwares Galfe mmons Galfe mmons Galfe Galf	4
Bla		
	ck Lamp, Coach Painters. \$200 Ordinary. 66 Ivory Drop, fair. 12 \$210 Ok Paint, in oil. kegs, 80 anst d cans, 10 Pressian, fair to best 650 To compare the compare the compare the comparent to the compare the compare the compare the compare the comparent to the compare the compare the compare the comparent to the compare the comparent to the	
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" Dools in oil	Prostings.	ane't came	, subject	keg,
" in oilgood, 250; best, 300	Glue, White	***********		12 6 4
on Paint, Bright Red P B 24c	Glasiers' Politic Time			
Brown 20 m ride	Gum, Copal	*********	*******	
Purple P 3 3c	Damar	**********	******	2
Ground in Oil, Bright Red P & 514c	" dark.	***********	*******	3
Brown W m 414c	Litharge, English	***********		DG RO
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In oil asst'd cans, rie; kegs, se	Whiting Spanish	***********	*******	3
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" English	SIZES.	18t. 2d.	3d.	4th
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ite Lead, American, pure dry 7 to 8e	II X 14 to 16 X 24	8.75 8.2	7.10	2.
ite Peris Profish prime in oil in blis a Calca	15 X 36 to 24 X 30	12.75 11.50	9.75	8.
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in oilasst'd cans, ric; kegs, &c	26 X 46 to 30 X 50.	10-251 15-0	11.40	
low Chrome	30 X 52 to 30 X 54	17.25 16,0	13.40	
" in oil	34 X 58 to 34 X 60	18.75 16.7	15.00	
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Elephant	26 X 28 to 24 X 36	23.00 20.7	18.24	
00 Land	26 X 46 to 30 X 50.	27.00 23.00	19.25	
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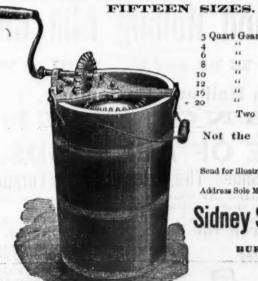
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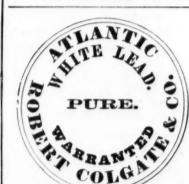


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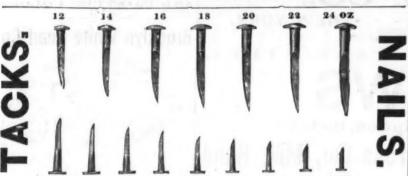


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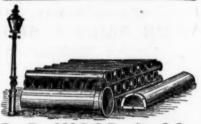
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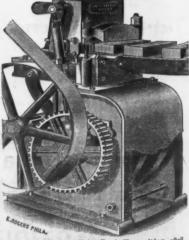
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6	PITTSBURGH.	36
	Merchant Iron.	
	Wood's Putent Plantshed Sheet, 1st quality (A)	ic le
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	Common and imperfect Juniata, to 50 % off. Discount, 35 to 40 %. Roofing Iron, Corrugated or Crimped.	5-
	RoofingIron, Corrugated or Crimped. Galvanized Common. No. 20. State No. 20. State No. 21 & 22 State State No. 21 & 22 State S	c
	Carnegle Bros. & Co.'s list, Beams and Channels. Solid Wrought Iron Beams, 3 to 104 in. x30 ft \$\mathbf{n}\$ 246	c
	Carnegle Bros. & Co.'s list. Beans and Channels. Solid Wrought Iron Beams, 3 to 10\(\) 10 10\(\) 11. x30 ft \(\) 10 2\(\) 12 "" 12 in. by 25 ft "24 Deck Beams, 7 to 9 in. by 20 ft "24 Channel Bars, 13 to 10 in. by 30 ft "24 "" 12 in by 30 ft "24	000
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1	Unequal Sided, 2x1¾ to 5x4. "2.50 Square Root Angles, 2x2 to 3½x3½, "2.50 Star Iron, 1½x1½ to 4x4. "2.50 Sash Iron, 1½x2½x2.2b. "2.50	2000
1	Nails.	100
1	Fence and Brads. 10d to 6od \$2.15' 4d and 5d \$2.96 8d and 9d \$2.40' 3d 3d 6d and 7d \$2.55' 2d 4.96	5
	84 in. Barrel. 6.15 134 in. 3.00	5
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	rod to 30d. 2-90 4d. 3.65 8d. 3.15 3d. 4.65 Fine Blued. 3d. 5.15	
ı	Cut Spikes—All sizes 2.40	1
1	Boat Spikes—All sizes. Each half keg to cents extra. TEMMS.—Note or acceptance at 60 days; or a discount of 2 per cent. for cash, if remitted within 10 days from date of invoice. An abatement of 10 cents per keg allowed upon orders of 200 kegs or over.	
1	allowed upon orders of 200 kegs or over. Steel. Square, Flat and Octagon Tool Steel.	1
	Steel	
1	Single and Double Shear Natters—Same as Tool. Knife, Tup, Die, Mill Pick, Drill—Ordinary sizes120 Machinery Steel—Round. 14 to 2 in	
- New Park	Machinery Steel-Round, 100	
4.70	Agricultural Steels. Solid Cast Steel Plow, 4 to 16 by 3-16 to 36 in	
4 07 M	Agricultural Steels. Solid Cast Steel Plow, 4 to 16 by 3-16 to 36 in	
i but but don't	Reaper and Scythe	
0	fork and Hoe. 6c forse Bake Teeth, tolength. 7c ringer Bar. 7c cutter Bars. 7c German Spring Steet. 6c 3c 7c 2cmnstalk Cutter beveled to length. 7c 2lanters' Hoe, C. S. 6c doc. C. S. 6c	
-	Sheet Steels	
0	German, 10 to 16 g 70 Common C'st, 17 to 20 g9c 17 to 20 g10c Best Cast, 10 to 16 g120 Common C'st, 10 to 16 g. e. 11 to 20 g130 Hells and Castings.	
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CSE	Heavy Hardware. Botts, Screes, Nuts, etc. Lewis, Oliver & Phillips, discount off Standard List. arriage & Tire Bolts, ordinary orders 75, & 3 % off net tove Bolts	I
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C	ast Iron Washers3140 P m net	
N	from best selected hickory, and ironed complete, in the most approved patterns. o. 1 Southern Plow Single Tree, Ironed	
N	Ingle Trees, Neck Yokes and Double Trees, made from best selected hickory, and ironod complete, in the most approved patterns, o. 1 Southern Plow Single Tree, Ironed complete, Irons all Wrought	
N	0. 3 wagon Single Tree, fron complete, Irons all Wrought, except Malleable Fer- ruleeach, see net	•
N	riveted on; one side acts as a wear iron for wheel to rub against	-
80	Irons all Wrought, except Malleable Fer- rule	Binpl
W	agon Box Strap Bolts— For orders of 100 Set, 45&10 % dis. to in. long by 7-16 at Serew End, # set of 8 bolts 450	an

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Species	
Delivarian Dordriman die 68 g T. Inned Parkers die 68 g die 68 g Delivarian	
Onyx	
Tacks. Brads. &cc.—New List	
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# doz 10 ln, \$3 60; 12 ln, \$5 40 net; case dis 5 5	
Wire.— Bright or Ann'd, No. 19 to 36 dis 624 g. "No. 27 to 36. dis 674 g. "No. 0 to 18 dis 674 g. Coppered v to 16. dis 508 Tinned Broom Wire. dis 558 Galvanized, No. 7 to 18 Market list, as 80 s Wringers.—Noveity No. 10. % dos. 6600 net Nove ty No. 2. 6600 net Universal, No. 24. 6500 net	
PITTSBURGH.	
Merchant Iron.	
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Galvanized Common. Black. No. 20	-
Carnegle Bros. & Co.'s list. Beams and Channels. Solid Wrought Iron Beams, 3 to 10½ in. x30 ft., \$\\ \text{h}\$ & 2½ cc 12 in. by 25 ft. 22 cc 14 ii. 12 in. by 25 ft. 22 cc 25 cc Beams, 7 to 9 in. by 20 ft. 22 cc Channel Bars, 1½ to 10 in. by 30 ft. 22 cc 12 in by 30 ft. 22 cc	
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Dusings and Castings not otherwise specified. 240	
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Heavy Hardware. Bolts, Screes, Nuts, etc. Lewis, Oliver & Phillips, discount off Standard List, rriage & Tire Bolts, ordinary orders 75, & 35 off net ve Bolts	
tk Ends. 4. Hot Pressed Sq. and Hex. Nuts. 5. 0 % off net tashers, all made from new band iron, se % % off net tas and Washers in 25 % boxes, \$6 % % ox. Nuts and Washers in lots less than one keg each size, \$6 % % ox. Nuts and Washers in 5 % boxes, ce % ex ap and T Hinges. 6. 0 % off net arrow Teeth. 6. 1 % off net arrow Teeth. 6. 2 % off net arrow Teeth. 6. 3 % off net arrow Teeth. 6. 2 % off net arrow Teeth. 6. 3 % off net arrow Teeth. 6. 3 % off net arrow Teeth. 6. 4 % off net arrow Teeth. 6. 5 % off net arrow Teeth. 6. 6 % off net arrow Teeth. 6. 6 % off net arrow Teeth. 6. 6 % off net arrow Teeth. 6. 7 % off net arrow Teeth. 6. 8 % off net arrow Teeth.	4
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CI	HICAGO.
(The Chicago Stam)	ping Co., 10, 12 & 14 Lake St.)
	March 3, 1879.
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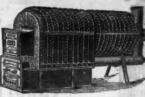
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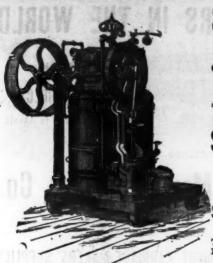
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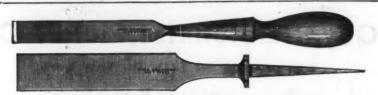
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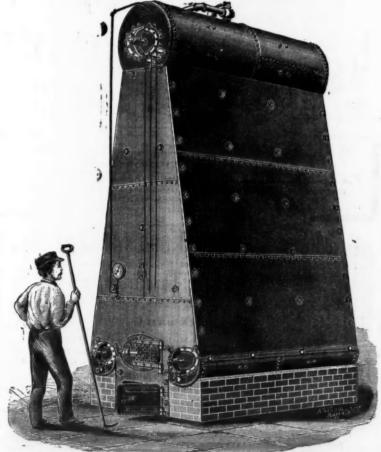
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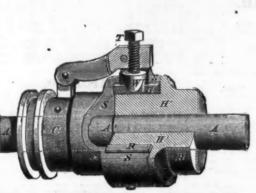
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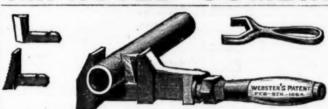
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PORTUGUESE and SPANISH.

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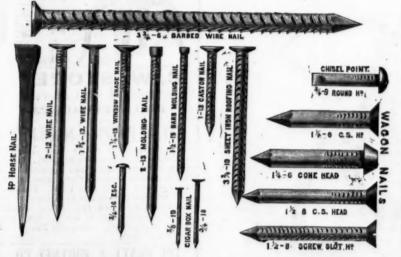
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Drividera, "Cook's"
Dividera, "Cook's"
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Dog M 221:sa, "Automatic.
Dogr Springs, "Torrey's Rod. & &
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Eccentric Steel Coil Spring, No. 1. &
Door Stops. "Thurston's"
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Drills, "Morse Straight Shank.
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Silver Glass
Beil Fulls
Lanterns, Tubulars, No. o.,
Railroad, Oli, No. 43.
Guarded, Oli and Candle, No. 25.
Triangular,
Hurricane
Lead. Sheet
Pipe.
Lecks No. | Lanterns. — Tubulars, No. 0. | \$\psi\$ doz 10.00 |
Raitroad, Oli, No. 35	\$\psi\$ doz 8.00
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Guarded, Oli and Candle, No. 25	\$\psi\$ doz 8.00
Triangular	\$\psi\$ doz 4.00
Hurricane	dis 20.5
Leads.—Sheet	\$\psi\$ 5.560
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Lecks.—Norwaik Lock Co. (reduced list) dis 5.560	
Eagle Cabinet	dis 25.560
W. William	dis 2 Eagle Cabinet. dis 25
W. Wilcox & Co. Padlocks dis 25
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W. doz 20
Messuring Tapes. Eddy's dis 25
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	RivetsBlack
1	Copper
1	Razor StropsTorrey'sFull line.
	Razer Streps.—Torrey's
	Carriage in to 8 papers dis 50 s
	The state of the s
1	Tantor's Geese "Potts" dis 31% 4 Mrs. Potts' Inge Polishing, Nickeled 8 doz not 8 50 Snsh Locks.—King & Hutchinson's, new list dis 40 Hopkins & Dickinson's.
1	
	Sash Locks.—King & Hutchinson's, new list dis 40 5 Hopkins & Dickinson's. Sandpaper.—Baeder & Adamson. dis 40 5 Sash Weights.—Patent Eye. P b 14c Saws.—Hand Saws, Disston's. dis 20 5 Wheeler & Clemson. Cross-Cut Saws. W. & C., Common Tooth, No. 1. P foot 35e Champion " P foot 45e Disston's, Common Gt. American " P foot 44e Boynton's Lighting " P foot 45e Saw Settls.—Spring Laver." P dos \$1co.
	Sandpaper.—Baeder & Adamsondis 14 5
	Sash Weights.—Patent Eye # D 1140
1	Saws.—Hand Saws, Disston'sdis 20 %
	Cross-Cut Saws.
I	W. M. & C., Common Tooth, No. 1 P foot 350
	Disaton's, Common " Foot 440
	Boynton's Lightning " Foot 460
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1	American Flat-Head Irondis 60 \$
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1	Iron
1	Grilley Nickel-plated Plano. dis 5545 \$
1	Shaves.—Kimball's Finch 2140
1	Weich & Grimth, Extra \$\psi\$ dos \$\psi_0 \lefta \) Scales, -Fairbanks \$\psi_0 \psi_0
1	Shot.—Tatham's
I	Shovels.—O. Amesdis 3214 \$
ı	M. B. & D
١	Shet. Tatham's
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ı	Stock and Dies.—King'sdis 10&5 \$
l	Pittsfielddis sokio s
1	Traps.—Oneida, Genuine. dis 33½ % Oneida, Imitation, H. & N. dis 50£10 % Blake's. dis 50£10 %
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١.	No. 2
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	Howard Vise Codia 3314
1	No. 2.
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Pig Lead —Pigs ... Antimony... Bismuth ... Nicket ... Cracibles — Dixon'

| Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | Simple | S

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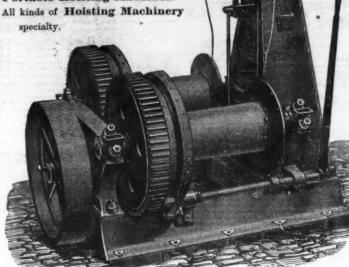
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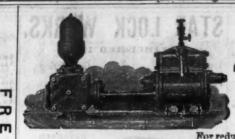
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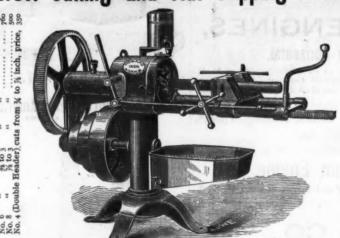
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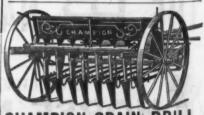
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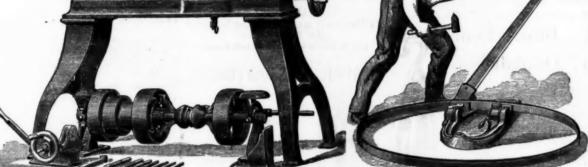
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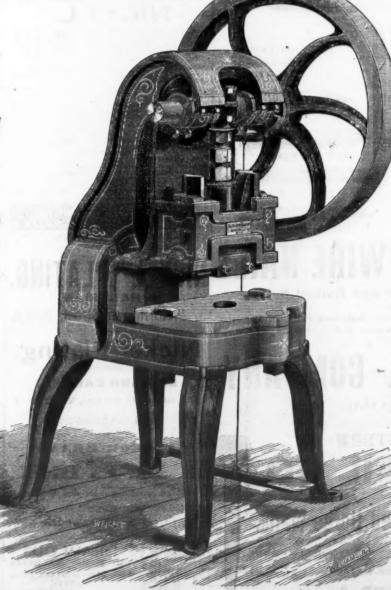
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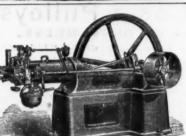


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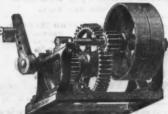
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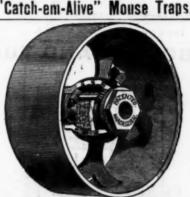


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